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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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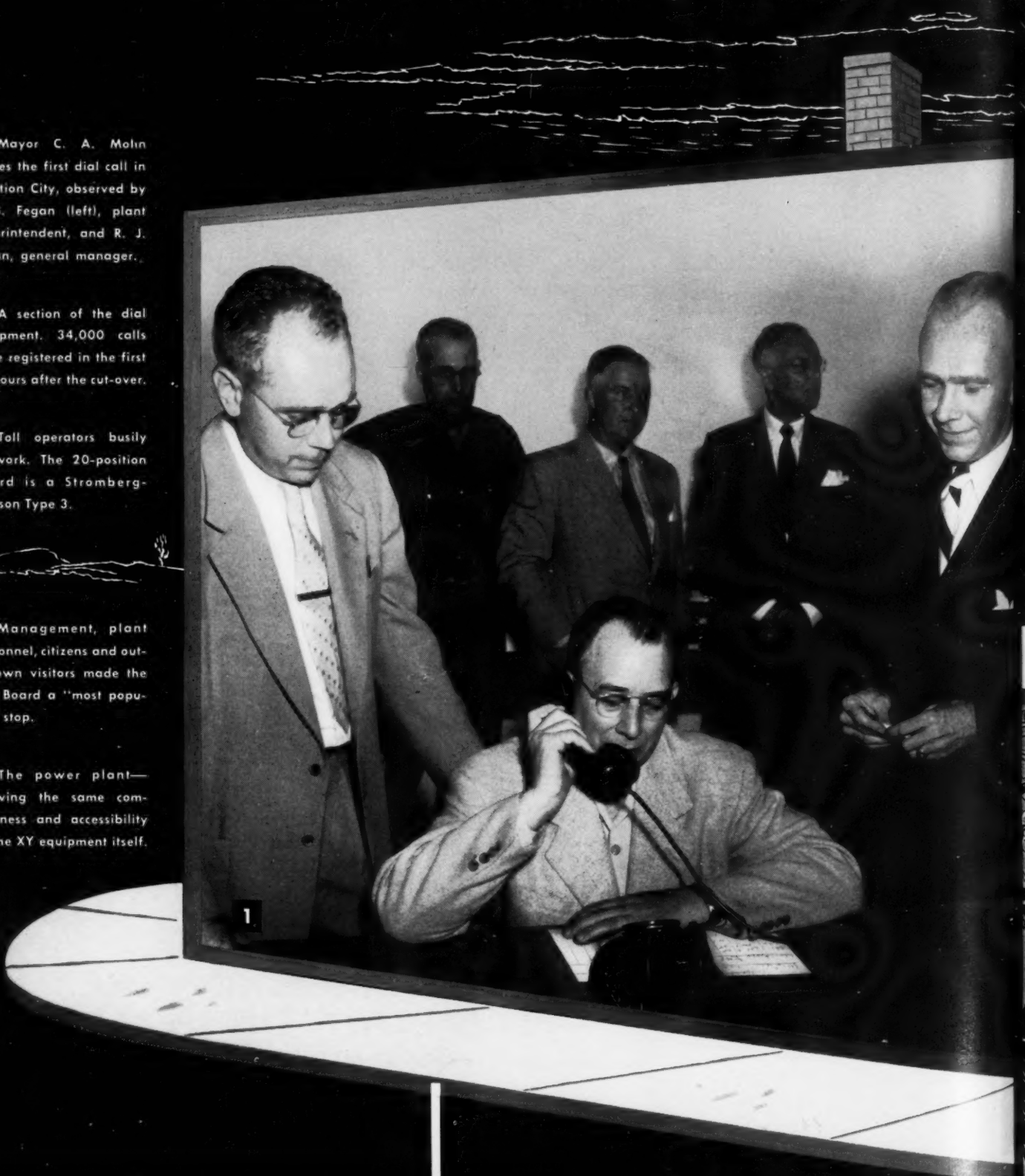
an event of interest to YOU...

Junction City, Kansas



1 Mayor C. A. Molin makes the first dial call in Junction City, observed by T. B. Fegan (left), plant superintendent, and R. J. Fegan, general manager.

2 A section of the dial equipment. 34,000 calls were registered in the first 24 hours after the cut-over.

3 Toll operators busily at work. The 20-position board is a Stromberg-Carlson Type 3.

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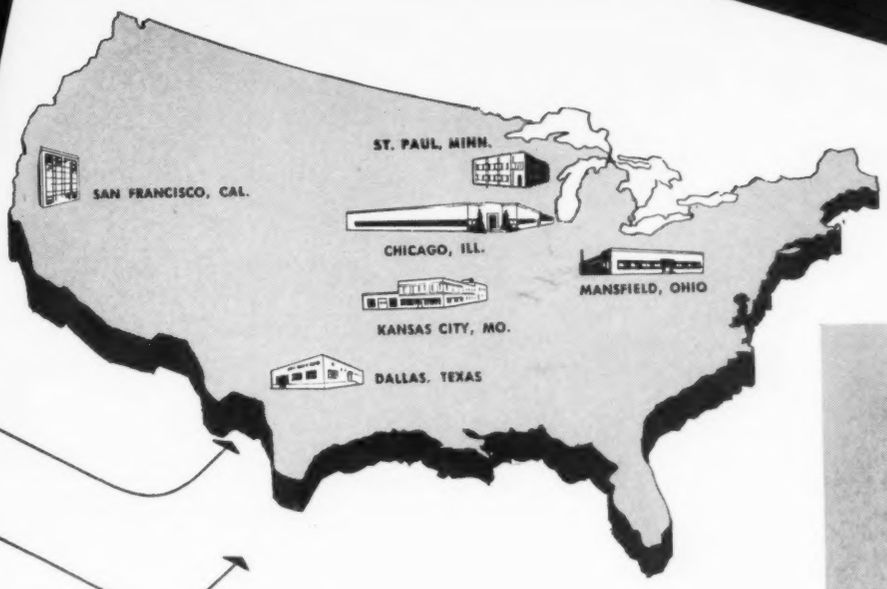

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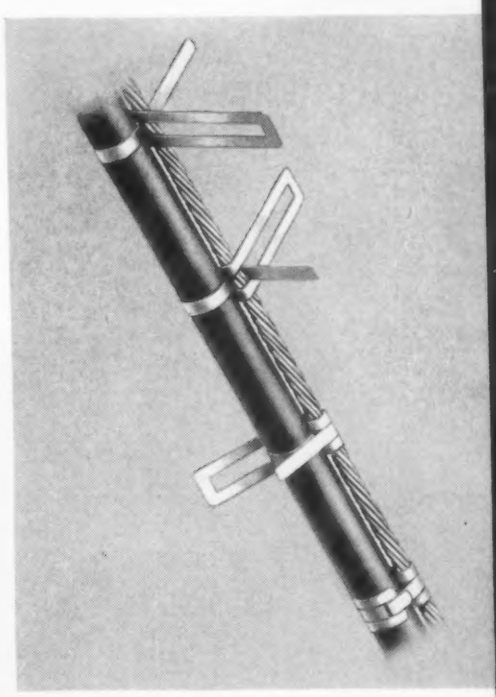

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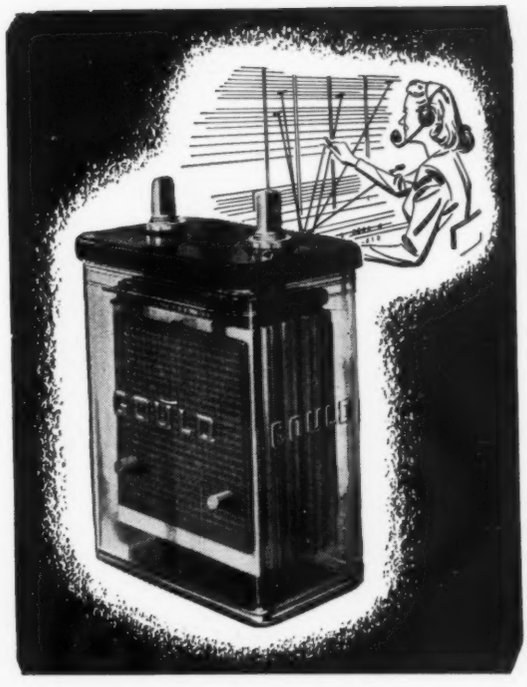

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FLASHES AND PLUGS

CUD-HAVE BEEN INSTINCT. Dorothea's Pride, a grand champion 1,190-pound Hereford steer, recently wandered away from the car lot in Kansas City, where his owner had him on exhibition.

An anonymous telephone call led searchers to a pasture seven miles north of town where they found the $6,690 animal munching on grass. Nobody knew how he got there.

• • •

WIDE OPEN PACES. A Texas woman recently wanted to report a prowler to the Dallas police.

She called her suburb's city offices for directions on how to do it, and was given procedure instructions.

"Oh, yes," she said. "I understand. I call the Dallas city hall and ask for Mr. Homer Sides."

"No, lady," said her informant.

"Just call the city hall and ask for homicide."

• • •

INVENTORY. At 5:30 one morning an excited caller telephoned a Pennsylvania fire department. "There's a big fire on Corning street," the voice said. "I can see the big flames lighting up the sky."

Three fire companies immediately roared into action. The fire turned out to be a brilliant orange sunrise.

As one of the firemen went back to bed he remarked: "We'll have to get a lot more hose to reach that one."

• • •

ANYWEIGHT, IT'S A BOY. In Omaha, Neb., a Western Union operator recently repeated the message to the sender: "It's a boy. Seventeen pounds, seven ounces."

The operator couldn't hide the surprise in her voice. "Was that seven pounds or 17, sir?" she asked.

"Seventeen," the sender replied, and added with a chuckle:

"I don't know why but people asked the same question three years ago when we adopted the other baby."

• • •

APPE-TEASER. A Chicagoan had 37 homing pigeons. One Tuesday night they all were stolen, and two days later four of them came home.

Tied to the leg of one of the returning birds was a note which read: "You'll never see the rest."

The owner, however, expressed confidence that all his pigeons would come back.

He figured the thief probably planned to eat the birds. But, he said, his pigeons were trained for racing and as a result, are tough and stringy.

CIRCULATION

Guaranteed circulation of this issue is 9,865, of which 9,372, or 95 per cent, is paid.

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608 S. Dearborn St., Chicago (5), Ill.

U. S. A.

Nationwide Toll Dialing

*By C. C. DONLEY**

Chief Engineer
Lincoln (Neb.) Telephone & Telegraph Co.

CUSTOMER toll dialing is about out of swaddling clothes. It's a pretty husky youngster and will grow up rapidly, much sooner than most expect. This newcomer is a very important development in the telephone industry. Operator toll dialing has made and will continue to make important contributions to better toll service. Customer toll dialing will go even further, much further in this respect.

In 1952, of the 2,250 million toll and multi-unit messages, 455 million were customer dialed. Most of these were of the zone or short-haul variety. However in one exchange, on an experimental basis, sufficient toll calls, as you and I know toll calls, were customer handled to yield significant data. For example, the speed of service on customer dialed calls was 18.2 seconds; on operator handled about 100 seconds; 95 to 96 per cent of the dialable calls were customer dialed. Apparently the users like this service. A notable installation of customer toll dial equipment initially intended as a trial or an experimental unit has now been made permanent, and influenced, in part at least, by the reluctance of users to give up this new type of service. The service is being extended on an individual basis to other places.

It seems reasonable to expect that the customer dialable toll calls will increase as station-to-station is more and more used and, too, perhaps as mechanized means of handling person-to-person traffic is developed. In any case, the resulting improvement in service will lead to greater use of toll service which will swing the cost of customer dial equipment into equilibrium with manual handling costs.

If there is a point to this for those of us in the Independent field it is that in our future planning we should give consideration to this new development. Both toll and local exchange plant is involved. The objective, as you know, is to ultimately merge all local exchange and toll plant into one integrated system or, as someone has said, one multi-office area covering our country and Canada. When this is achieved, and I have no doubt it will be, telephone users everywhere will rightly expect this type of service.

Local exchange plans are concerned because 2-5 numbering is believed essential to successful customer toll dialing and extremely useful in operator toll dialing. This also involves exchange names rather than town or city names. Transmission requirement will be more severe due to the contemplated extensive use of multi-switch alternate routes. In the past the end links have provided the echo, cross-talk and singing margins lacking on the long low equivalent sections. Under the new plan each part will be worked at its maximum efficiency or lowest working net loss. This has made desirable new and more precise methods of design. (If you have not done so, I suggest you read the article in the Bell Tech Journal of September, by H. R. Huntley, entitled "Intertoll Transmission.") Maintenance requirements will be more complex when operators are no longer present to assist by reporting faults. We can look forward to a continuing program for improvements of maintenance methods. Other new problems are to be introduced, but I am confident that, as usual, we'll take them in our stride.

Nevertheless, if we are to participate in this new service, proper planning for the future is imperative. Even the arrangement necessary to permit our customers to receive directly incoming dialed toll calls requires the institution of the 2-5 numbering system at least for toll purposes.

As previously mentioned, customer toll dialing should receive consideration in all new exchange conversions, numbering schemes, exchange names and in the planning and construction of toll plants.

Of course, what a particular company may elect to do is a matter to be decided by that company. 2-5 numbering may be used on toll only, or on both toll and local. In either case, it is probable that drop back selectors or special switch trains will be required. Whether selectors with director access should be provided on new installations and major additions is a pertinent question in large exchanges. The answer to these and many other questions which may be encountered in connection with customer toll dialing, it seems to me, must rest on sound engineering economy.

The importance of securing the latest information should be emphasized. I appreciate, only too well, the difficulty of doing this. Our company is just finishing a large operator toll dial equipment installation. It is not arranged for 2-5 numbering because when planned and manufactured we knew only of the first two letters of the town name plus five-digit system.

*Mr. Donley presented this address at the Plant Conference of the recent convention of the United States Independent Telephone Association.

We do have selectors with director access and building extension space to provide housing for the ticketing and other equipment required for customer toll dialing. To make information on operator and on customer toll dialing available to the Independent operators and manufacturers, our association (USITA) has set up two inter-toll dial committees which, it is hoped, will regularly secure and issue up-to-date information. The publication and distribution will be through the association's Washington office. I suggest you forward your questions to Clyde Bailey, executive vice president, or to George Richert, engineer, of the United States Independent Telephone Association.

Locally, each Bell System company has an intertoll dial committee. One of the principal functions of these committees is to provide the information you desire on these subjects. Intercompany visits will be mutually helpful.

I am sorry there is not sufficient time to discuss, even briefly, the tone requirements or the centralized automatic and the full automatic ticketing arrangements. Finally, don't sell Customer Toll Dialing short. The Independent industry has an important part in this progressive step and as Red Barber says, "Progress is our most important product."

In conclusion may I quote our good friend Francis X. Welch (Washington editor of TELEPHONY) who recently wrote, "The telephone industry or any other industry must grow or die; expand or contract. It can never stand still."

Following is a description of the numbering plan for nationwide toll dialing:

NATIONAL NUMBERING PLAN

General

A uniform national numbering arrangement, referred to as 2-5 (two letters and five digits), is essential in all local central offices, both Bell and Independent, to realize the ultimate service advantages accruing from toll dialing on a nationwide basis. 2-5 directory listings are required for inward and outward customer toll dialing at both the toll center and tributary.

Although 2-5 numbering is needed for toll, local dialing may be on a four, five or seven (2-5) digit basis depending on the number of telephones in the local dialing area. For extended area (local service) dialing, a 2-5 dialing arrangement will probably be desirable, in some cases in multi-office cities it will be mandatory and in many instances it may be attractive from a trunking standpoint. If desired, seven-digit local dialing in small offices can usually be provided at little additional expense by digit absorbing features.

When local dialing is to be maintained on a four or five-digit basis rather than on a 2-5 basis it may be desirable to provide means for protection of service in case attempts are made, by transients especially, to use the seven-digit (2-5) number listed in the directory for local dialing.

Nationwide customer toll dialing requires only 2-5 directory listings, 2-5 station number cards and combination letter and numeral dial plates.

Description of the Plan

National Codes. The uniform numbering plan provides that each of the approximately 30,000 central offices ultimately expected in the United States and Canada be given a distinctive designation which identifies that particular office unit and that office only. This designation will consist of two elements, an area code and a central office code. Any outward toll operator or customer, wherever located, will use that same designation in reaching that office through the dial toll switching network.

In a sense, all of the thousands of offices involved are to be treated as though they were contained in one huge multi-office city. Toll operators and customers will use the area code and the office code in reaching an office situated outside their own numbering plan area, while on calls to points within their own numbering plan area they will dial only the number as listed in the directory. In principle the method employed is to divide the two countries geographically into numbering plan areas and to give each of these areas a distinctive code. Within each of the numbering plan areas each office unit will have a code unlike that of any other office unit in the same numbering plan area and also unlike any area code. Hence, for toll dialing purposes, each office unit will have an area code and central office code which will form a "national code" unlike that of any other central office in the two countries.

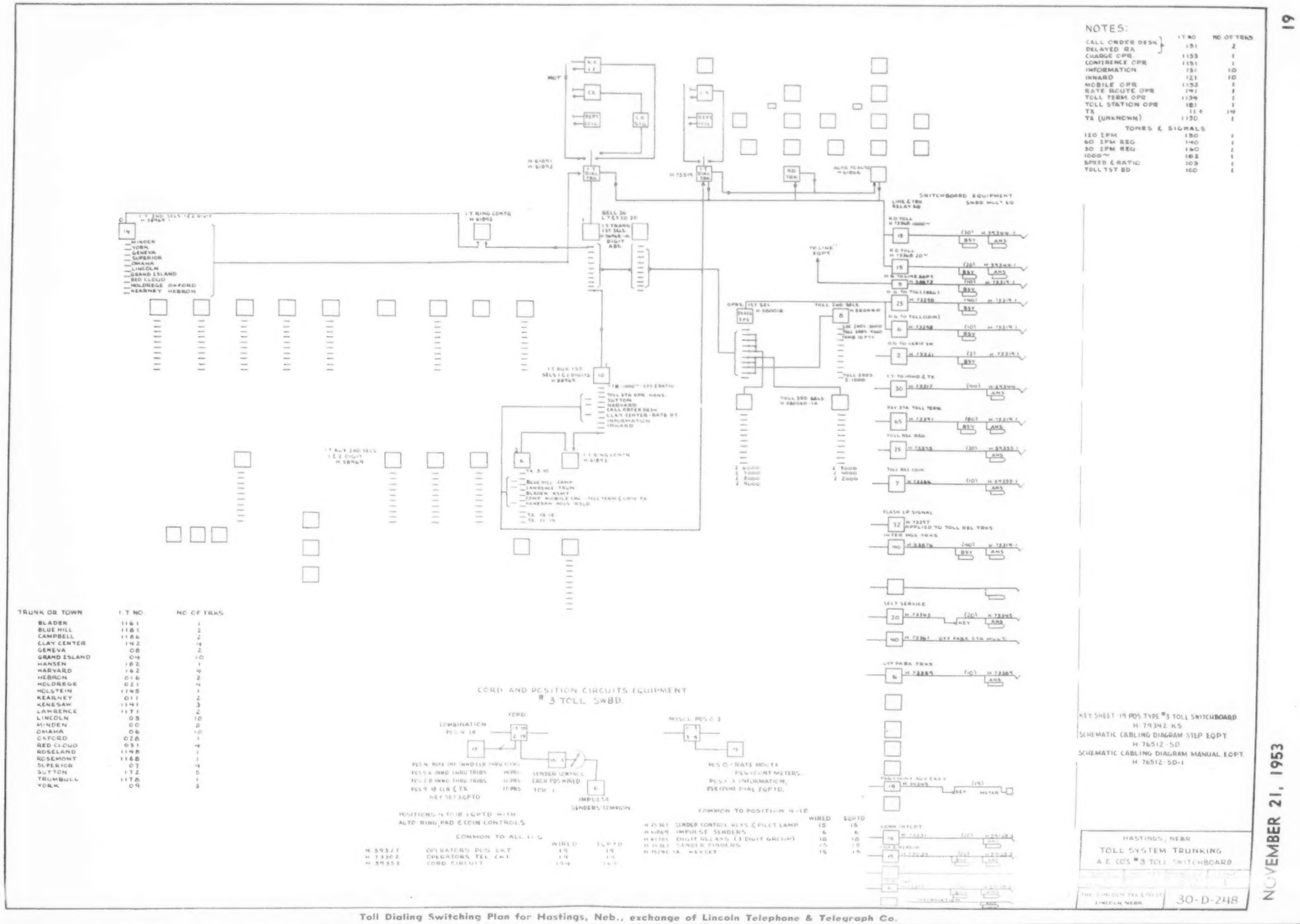
Numbering Plan Areas. In this geographical division into numbering plan areas, border lines between states and between Canadian provinces have generally been used as area boundaries. Since about 500 central office codes are the maximum number which can be used in a numbering area, it is necessary to divide the larger and more populous states and provinces into two or more areas making, of course, due allowance for growth. New York State with the largest number of central offices is divided into six numbering plan areas; Texas has five areas; Pennsylvania, Illinois, Ohio and California have four each. Other divided states have three or two areas depending upon the number of offices to be served. Ninety-four areas are being provided, at present, with 16 states and two provinces served by two or more numbering plan areas, the remaining states and provinces by one area each. *Fig. 1* is a map showing the numbering plan areas with codes.

In fixing the intrastate numbering plan boundaries of subdivided states, effort was made to avoid cutting across heavy toll traffic routes in order to have as much of the toll traffic as possible terminating in the area in which it originated. The advantage of arranging the numbering plan areas in this manner is readily apparent since on this traffic which does not cross an area boundary the area code is not required.

As indicated previously, the area codes must be of a type which will enable the switching equipment to distinguish them from the codes of central offices. On the telephone dial number plate, letters are assigned only to the dial positions 2 to 9 inclusive (on some number plates a Z appears on the 0 position but the Z is never used in a central office code); hence, any office code will always avoid a 1 or 0 in the first two pulls. The digits 1 and 0 can, therefore, be used in area codes to distinguish these from office codes. It is not practical to use them as initial digits of area codes since customers dial 0 to reach operators and some local dial equipment is arranged to ignore an initial 1 for technical reasons. However, 1 or 0 in the second place can be employed in an area code without conflicting with any central office codes or interfering with any existing practices. Accordingly, the area codes will consist of three digits with either a 1 or a 0 as the middle digit, 516, 201, etc. A total of 152 of these area codes are available.

When the three-digit area codes were first proposed, it was thought that there might be some operating advantage in differentiating between states and Canadian provinces served by a single numbering plan area and those requiring two or more areas. It was further believed that the distinction could be accomplished by assigning area codes with 0 as the middle digit (X0X) to the single area states and provinces and those with the middle digit 1 (XIX) to the multi-area states and provinces. Because of a number of factors, among which are the unprecedented station growth in many sections and the need to meet the requirements for customer dialing on

Toll Dialing Switching Plan for Hastings, Neb., exchange of Lincoln Telephone & Telegraph Co.



TRUNK OR TOWN	I.T. NO.	NO. OF TRKS.
BLADEN	1161	1
BLUE HILL	1181	2
CAMPBELL	1186	2
CLAY CENTER	142	4
GERVEA	08	2
GRAND ISLAND	04	10
HANSEN	182	1
HARVARD	162	4
HEBRON	016	2
HOLDREGE	021	4
HOLSTEIN	1148	1
KEARNEY	011	2
KENESAW	1141	3
LAWRENCE	1171	2
LINCOLN	03	10
MINDEN	00	8
OMAHA	06	10
OXFORD	028	1
RED CLOUD	031	4
ROSELAND	1148	1
ROSEMONT	1168	1
SUPERIOR	07	6
SUTTON	172	5
TRUMBULL	1178	1
YORK	09	3

NOTES:	I.T. NO.	NO. OF TRKS.
CALL ORDER DESK	181	2
DELAYED RA		
CHARGE OPR	1153	1
CONFERENCE OPR	1151	1
INFORMATION	131	10
INWARD	121	10
MOBILE OPR	1152	1
RATE ROUTE OPR	191	1
TOLL TERM. OPR	1139	1
TOLL STATION OPR	181	1
TX	11 9	140
TX (UNKNOWN)	1130	1
TONES & SIGNALS		
120 IPM	180	1
60 IPM REG	140	1
30 IPM REG	160	1
1000~	102	1
SPEED & RATIO	103	1
TOLL TST BD	100	1

		WIRED	EQPTD
H 59321	OPERATORS POS. CKT	19	19
H 73302	OPERATORS TEL. CKT	19	19
H 59353	CORD CIRCUIT	19#	19

COMMON TO POSITION 4-18		WIRED	EQPTD
H 75361	SENDER CONTROL KEYS & PILOT LAMP	15	15
H 61869	IMPULSE SENDERS	6	6
H 61761	DIGIT RELAYS (3 DIGIT GROUP)	18	18
H 75361	SENDER PINDENS	15	15
H 75296-1A	KEYSET	15	15

NOVEMBER 21, 1953

Toll Dialing Switching Plan for Hastings, Neb., exchange of Lincoln Telephone & Telegraph Co.

a nationwide basis, it has been necessary to arrange for more numbering plan areas than had been originally anticipated. This has resulted in further subdivision of some states already divided and in a few cases in the division of single area states. If the original procedure for using XIX codes were to be continued it is clear that sooner or later the XIX codes, which designate multi-area states, will become exhausted and X0X codes will then have to be assigned in multi-area states.

The experience that has been gained with operator toll dialing, and some customer nationwide dialing has led to the conclusion that there is little, if any, practical value in the ability to determine from the type of code employed whether there is more than one numbering plan area in a state or province. A change has, therefore, been made in the code assignment procedures. All further assignments of codes will be made from either the XOX or XIX series without distinction.

Within each numbering plan area, each office unit will be assigned an office code different from that of any other office code in that same area. Ultimately, each customer will be given a 2-5 type number consisting of an office name and five numerical digits, such as LOcust 4-5678. In the larger cities customers will dial seven digits, LO 4-5678, on local calls to numbers in the same exchange. In many of the smaller places the customers will dial only five, or possibly the last four, of the numerical digits on local calls and the office name will be employed for toll or extended area dialing only.

It is desirable that plans for the introduction of 2-5 numbering in these smaller offices contain provisions for insuring that such few local calls as may be dialed on a seven digit (2-5) basis will be properly completed. This can be accomplished quite inexpensively by providing digit absorbing selectors in the first stage of the local train. These selectors may be adjusted to absorb the two or three office code digits as required and to trunk on the proper numerical digit, or to trunk at once when the abbreviated local number is dialed.

This service protection against misdialing because of the 2-5 listing with four or five digit local dialing may be easily obtained on an initial installation of step-by-step equipment. At existing step-by-step offices, D.A. selectors may be installed on growth projects to provide on a "stock piling" basis the necessary D.A. selectors for a future conversion to 2-5 listing. Also, it should be noted that in the selection of office codes, due consideration should be given to the digit absorbing features that will be available.

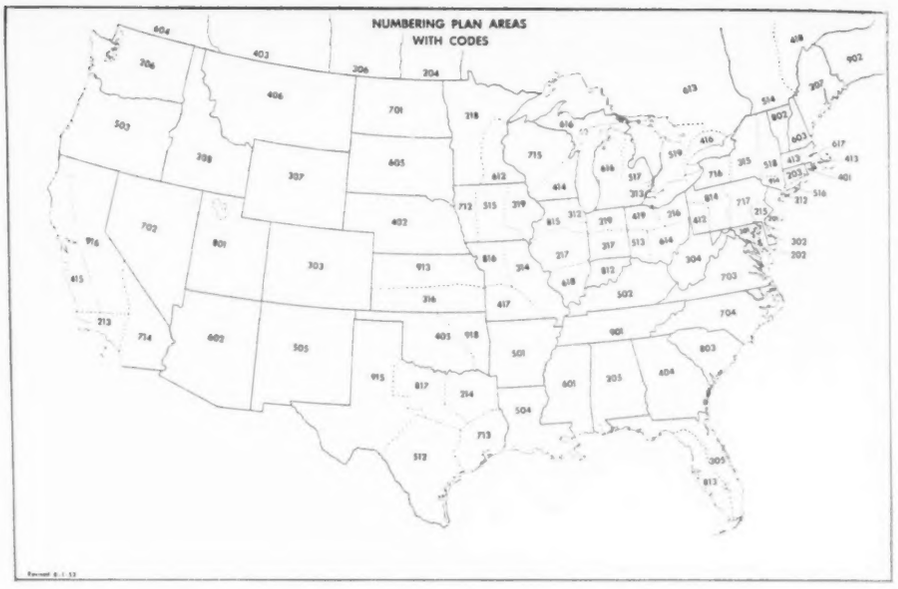


Fig. 1

Considering the thousands of central offices which now have numbers other that the 2-5 type and the fact that to change existing numbering systems is often a difficult procedure, it will be a number of years before this ultimate objective is realized. As a practical measure, therefore, it will be necessary during this interim period to employ office codes for operator toll dialing which are not derived from the customers' telephone number in many cases.

In dialing to a combined 2-4 and 2-5 city, for example Los Angeles, the three-digit office code for toll dialing into the PArkway office which has six digits in the local number, will be PAR, whereas to reach the REpublic 2 office having seven digits in the local number, the office code will be RE2 To call a telephone in Winchester, Va., with only four digits in the local numbers the operator will use a code consisting of numerical digits only, such as 294 which, of course, must be different from every other office code in this numbering plan area. To secure the particular office code to be used in reaching an office where the called number does not furnish complete information, the toll operator must refer to a position bulletin or the route operator. This reference work, of course, takes time and, therefore, imposes a delay in completing the call.

In addition to giving a distinctive three-digit code to each office within each numbering plan area, each toll center will also be given a three-digit code to enable outward operators in distant cities to reach inward, information, and delayed call operators at the toll center. Calls to these operators will be routed in the same manner as calls to customers except that the operator codes will be used instead of a station number and a toll center code in place of a central office code. For example, on a call to Cleveland Information, the code might be 216+550+131, where 216 is the area code, 550 the TC code for Cleveland, and 131 the code for Information. On a call to Akron Information, in the same area, the code might be 216+590+131. TC codes consist of three numerical digits and are selected from the local office series, preferably with "zero" as the third digit.

Central Office Names. The central office names now in use in the various cities throughout the country were chosen, generally speaking, on the basis of their suitability for customer dialing within the city itself. Many of these names are unfamiliar words to operators and customers in distant cities; consequently their use contributes materially to dialing errors. This situation is gradually being corrected by selecting names for new offices from an approved list and by replacing existing names, which experience has shown to be particularly troublesome, with names from this list.

While uniform numbering plans are important in operator toll dialing, they play an even more essential part in the dialing of toll calls by customers. Operators can be trained to adapt their dialing procedures to the type of local numbering system encountered in the called city, even though more time is consumed and more errors result than would be the case if all telephone numbers were of a uniform type. Cus-

(Please turn to page 36)

★ ★ ★ IN THE ★ ★ ★ NATION'S CAPITAL

by FRANCIS X. WELCH WASHINGTON EDITOR

REA Executive Weitzell sounds call for more telephone loan business . . . more practical business methods. FCC license fees expected to go up. Microwave to serve community TV antenna system approved for Mountain States T&T. See NLRB policy alterations.

THERE was quite a down-to-earth discussion of REA policy on rural telephone loans given by W. C. Weitzell, chief of REA's telephone operations and loans division, to the Alabama-Mississippi Independent Telephone Association at its annual meeting at Birmingham, Ala., on Nov. 9 and 10. It may be presumed that Weitzell's speech was cleared with REA and the Agriculture Department top officials. But it certainly lacked nothing in frankness.

Most noteworthy point in Weitzell's Birmingham talk is an avowed pitch for more REA rural telephone loan business. He openly urged the Independents to take advantage of the low-cost, low-term loans, which he said REA is prepared to provide on a businesslike basis.

This observer notices a shade of difference between Weitzell's candid "come and get it" approach and the somewhat more cautious previous comments by REA Administrator Nelsen. Nelsen has given the impression that the purpose of REA's loans was to supplement the lack of financing from private or commercial sources under difficult economic conditions. In other words, if a company could not get a loan anywhere else to take care of an unpromising rural service job, it was welcome to see what it could do at REA.

Weitzell's speech, however, would seem to step up the REA salesmanship a notch or two. He even suggested arrangements whereby the telephone companies could help each other get better loan deals.

In short, Weitzell seemed more concerned with getting the rural telephone program rolling faster. REA is under a mandate to Congress to get the farmers on the line, and it will take cooperation all around—small companies, big Independents, Bell System, REA, and commercial financing to obtain the necessary pace.

Weitzell said the changes that have been made within the past few months in REA policy and procedures have been changes in emphasis toward a more practical approach rather than a change in direction. An effort has been made to bring policies and procedures more in line with practical business methods.

In the case of area coverage requirements, for example, REA now believes that its borrowers should not be obligated to serve everybody within an arbitrary boundary regardless of cost. Consequently, REA's policy is to limit the areas to be served to those which can be reached at reasonable costs and at reasonable rates.

As to construction standards, Weitzell said some people "have been misled to believe that our construction standards are too high," although he admitted that some systems financed by REA have been built on the basis of standards higher than can be justified. Steps have recently been taken by Assistant Administrator O'Shaughnessy to make sure that the systems financed by REA are constructed in accordance with minimum adequate standards.

In fact, REA will not permit, without justification, "the financing of systems to be constructed substantially above our minimum standards." The idea of this, of course, is to obtain lower subscriber rates and the extension of service to more subscribers than would otherwise be possible through unnecessarily expensive facilities.

At the same time, REA intends to give more emphasis to the possibility of retaining reasonably good plant in order to reduce the over-all cost of production. Weitzell told the Alabama meeting that his agency realizes that in many instances existing plant may have five or 10 years of additional life and that to eliminate and completely replace such plant would be a waste. He also suggested the possibility of cutting down right-of-way costs, clearing costs, and maintenance costs by encouraging the maximum amount of joint use with electric companies.

One other notable interpretation that might be put on Weitzell's speech was his admission that the problem of obtaining extended area arrangements still remains to be solved. REA has been working with the USITA and the Bell System, and considerable progress has been made in arriving at mutual understanding. But the solution is still in the future. He also confessed to some difficulty in obtaining standard toll agreements in some instances.

Final point which this observer noted in Weitzell's important speech to the Alabama convention was the emphasis with which the REA officials denied (1) that REA has any desire to obtain control of Independent companies through loan foreclosure, and (2) that REA is trying to encourage cooperatives to take over Independent companies.

He concluded with the interesting suggestion that telephone associations (presumably state groups, such as the one he was addressing) might provide assistance to membership in building up well-managed business enterprises through such practical means as helping, planning, and preparing applications for loans. He even speculated on the possibility that associations of borrowers might provide smaller organizations with accounting, management, and technical assistance—especially in view of REA's present policy of cutting down on technical guidance and assistance to borrowers.

Fees on FCC Licenses Going Up

Those telephone companies which hold radio or mobile radio-telephone

licenses, issued by the Federal Communications Commission, construction permits for common carrier microwave relay systems, etc., face the possibility of a boost in fees paid to the federal government. It is part of a general play by the Eisenhower administration to make regulatory permits of all kinds

(Please turn to page 32)

REA Approves Five Loan Allocations, Two Loan Contracts

The Rural Electrification Administration approved five telephone loans during the week of Nov. 2 to 6. Details of the loans follow:

Mud Lake Telephone Cooperative Association, Terreton, Idaho, $116,000, second loan to this borrower.

This loan, together with the first of $265,000 approved in November, 1952, will be used to finance the improvement and extension of rural telephone service in Clark and Jefferson counties.

The borrower plans a system of 236 miles of line for 481 rural subscribers. Since approval of the first loan, the cooperative has acquired the Dubois Telephone Co. serving 121 subscribers. In addition about 20 miles of line will be acquired from the Mountain States Telephone & Telegraph Co., rehabilitated and integrated into the system. New facilities include 185 miles of line and dial central offices at Dubois, Terreton, Hamer and Kilgore. The Dubois building will house the cooperative's offices.

The new loan will also cover increased construction costs involved since the original one was approved.

* * *

Valley Rural Telephone Cooperative Association, Glasgow, Mont., $61,000, second loan to this borrower.

The funds will be used to finance the construction of facilities to serve 66 subscribers who were not included in the original loan. This loan will also cover increased construction costs involved since the first loan of $280,000 was approved in December, 1952. The two REA loans will enable the cooperative to serve 420 subscribers in Valley, Phillips and Roosevelt counties over 379 miles of line.

Dial central offices for the system will be located at Glasgow, Hinsdale, Frazer and Nashua. Valley Telephone Cooperative has arranged with Mountain States Telephone & Telegraph Co. to switch 20 of the subscribers. Service without toll charge will be available between the borrower's Glasgow, Hinsdale and Nashua exchanges and the exchanges of the Mountain States Telephone & Telegraph Co. in those towns.

* * *

Haviland (Kan.) Telephone Co., $104,000, second loan to this borrower.

These loan funds will be used by the borrower for the acquisition, rehabilitation and integration of the Coats & Southwest Telephone Co. now serving 138 subscribers over 67 miles of line. The Coats magneto central office will be converted to dial, 54 miles of existing line will be rebuilt and 27 miles of new line and other facilities will be added to bring improved service to the existing subscribers, and initial service to 42 subscribers.

The new loan, together with the first one of $141,000 approved in December, 1952, will enable the Haviland Telephone Co. to serve 570 subscribers and 20 switched stations in Pratt, Barber and Kiowa counties, including service for the first time to 90 subscribers.

* * *

Woolstock (Iowa) Mutual Telephone Association, $122,000, to finance the improvement and extension of rural telephone service in Wright and Hamilton counties.

Funds from this loan will be used to convert the existing telephone system, serving 218 subscribers, from magneto operation to dial, and to provide facilities to serve 48 new subscribers. About 54 miles of the existing line will be rebuilt and 15 miles of new line added. Completed, this system will consist of 69 miles of line.

* * *

Valley Telephone Cooperative, Lyford, Tex., $351,000, to finance facilities for the improvement and extension of rural telephone service in Willacy, Hidalgo, Starr and Cameron counties.

The borrower plans to use the loan funds to construct a system of 327 miles of line and four dial central offices to serve 395 rural subscribers now without telephones. In addition, the new cooperative proposes to acquire from the General Telephone Co. of the Southwest access rights to 50 rural subscribers. Dial central offices of the system will be located at Hargill, San Perlita, Stillman and Puerto Rico. Subscribers in each of the exchange areas will be able to call their nearby trading centers without toll charge.

* * *

On Nov. 3, REA also approved the following loan contracts: Peoples Telephone Co., Collinsville, Ala., $744,000, an increase of $378,000 over the original allocation approved in August, 1950.

Under revised plans, the borrower will use the loan funds to convert the existing system, serving 1,004 subscribers, completely to dial, and provide facilities to serve 607 new subscribers. Fifty-eight miles of the existing line will be rebuilt and 161 miles of new line added. Dial central offices will be located at Centre, Collinsville, Sandrock, Crossvile, Leesburg and Kilpatrick. The Leesburg office will provide operator and toll services for the whole system. Service without toll charge will be available between some of the borrower's exchange areas. The completed system will consist of 311 miles of line in DeKalb and Cherokee counties.

* * *

West Kentucky Rural Telephone Cooperative Corp., Mayfield, Ky., for $1,485,000, an increase of $305,000 over the allocation approved in September, 1952.

Under this loan contract the borrower proposes to construct modern facilities to serve 3,887 subscribers in Graves, Galloway, Marshall, Carlisle and Hickman counties in Kentucky, and Henry County, Tenn. This is 304 more subscribers than originally planned. Of this total, 2,665 are now without telephones. Dial central offices will be located at Hazel, Sedalia, Wingo, Lowes, Farmington, Cunningham, Fancy Farm, Lynnville, New Concord and Fairdealing. Under present plans, all of the borrower's exchange areas will be able to call their particular county seat without toll charge; a similar service will be available among a few of the areas. Completed, the system will consist of 802 miles of line.

Report of USITA Plant Committee

By W. M. DRIGGS, Chairman*

THOSE of us on the various committees feel that it is a privilege to participate in the activities of the association and each year look forward to this meeting (USITA Convention). I feel that each of us should take full advantage of such meetings as this and it is our obligation to our companies and to our industry to return to our respective areas and deliver the messages that will be given to us during the various conferences and general sessions of this convention.

This year President Blakeslee appointed a committee of 10 men from New York to Texas and each of these men have taken an active part in the year's activities and in formulating the program for this conference. In addition to these men, George C. Richert, Washington, D. C., acts as secretary of the committee, and as such, gets in on his share of the work. In spite of personal responsibilities and heavy work loads occasioned by conversions, storms, large plant programs, etc., these men have willingly given their time to the activities of the Plant Committee. I greatly appreciate all of this and in addition, I wish to express my appreciation to the companies who have so willingly made all of this possible. This spirit of cooperation makes my job as chairman very simple and for this I am deeply grateful.

The Plant Committee is given the responsibility of keeping pace with the new developments in our field, ever ready to exchange ideas, assist the association officers and the Washington office on plant problems and generally keep the industry informed of developments during the year. . . .

A meeting of the Plant Committee was held in Chicago during April at which time the sub-committee directors were appointed and the 50-odd subcommittee members were selected. The major plant subjects and the directors of these sub-committees are as follows:

(1) Cable—D. S. Seitz, York, Pa.

(2) Central Office and Station Equipment—G. W. Miller, Rochester, N. Y.

(3) Pole Line and Conduit—W. O. Trettin, Springfield, Ill.

(4) Transmission Testing and Inductive Interference—B. C. Burden, Lincoln, Ill.

(5) Wire Plant—J. A. McKinzie, Lincoln, Neb.

(6) New Techniques and Equipment—Ray Blain, Falls Church, Va.

(7) Toll and Trunk Networks—G. T. Sims, San Angelo, Tex.

(8) Exhibits—T. DeWitt Talmage, Chicago, Ill.

(9) Toll Dialing—E. L. Barnes, Rock Hill, S. C.

These sub-committees serve during the entire year and they stand ready and willing to serve you in solving your plant problems. Inquiries are received from practically all 48 states and several foreign countries during the year. Each of these are reviewed by members of the Plant Committee and the replies are then forwarded to the inquiring company.

W. M. DRIGGS

Active participation in state associations, local and district meetings, and state conventions by members of the Plant Committee has resulted from contacts made during the Plant Conference and exhibit demonstrations at the fall convention.

A portion of the time of the April committee meeting was devoted to a joint discussion with the following staff members of the REA: K. W. Benckert, chief of Telephone Engineering Division; Warner T. Smith, assistant chief of Standards Division; and J. L. Robb, telephone specialist, Outside Plant. The REA Construction and Engineering Manual was briefly reviewed and a number of engineering and construction policies were discussed. Each of the REA representatives described his particular section of the REA organization and its objectives. Each member of the Plant Committee had previously received copies of the abovementioned manual and comments have been made to the REA concerning changes which will be beneficial to the industry.

The balance of this meeting was devoted to adopting a program for the balance of the year and to formulating the program which will be presented to you today.

As the result of observations made by committee members while participating in state association work and by associations with smaller companies, it is apparent that one of the primary factors which is lacking in our industry is that of plant training. These smaller companies need training help and the majority of them are eager for it. A number of the larger companies

*Mr. Driggs also is vice president and general manager of the Texas Telephone Co. of Sherman, Tex. He presented this report at the recent convention of the United States Independent Telephone Association.

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It Starts Here

In North laboratories imagination combines with science in a never-ending search for new applications of all-relay telephony. Each step must improve performance, simplify installation and, if practical, reduce cost. Above all, it MUST maintain the standard of dependability for which the name NORTH has stood for more than half a century.

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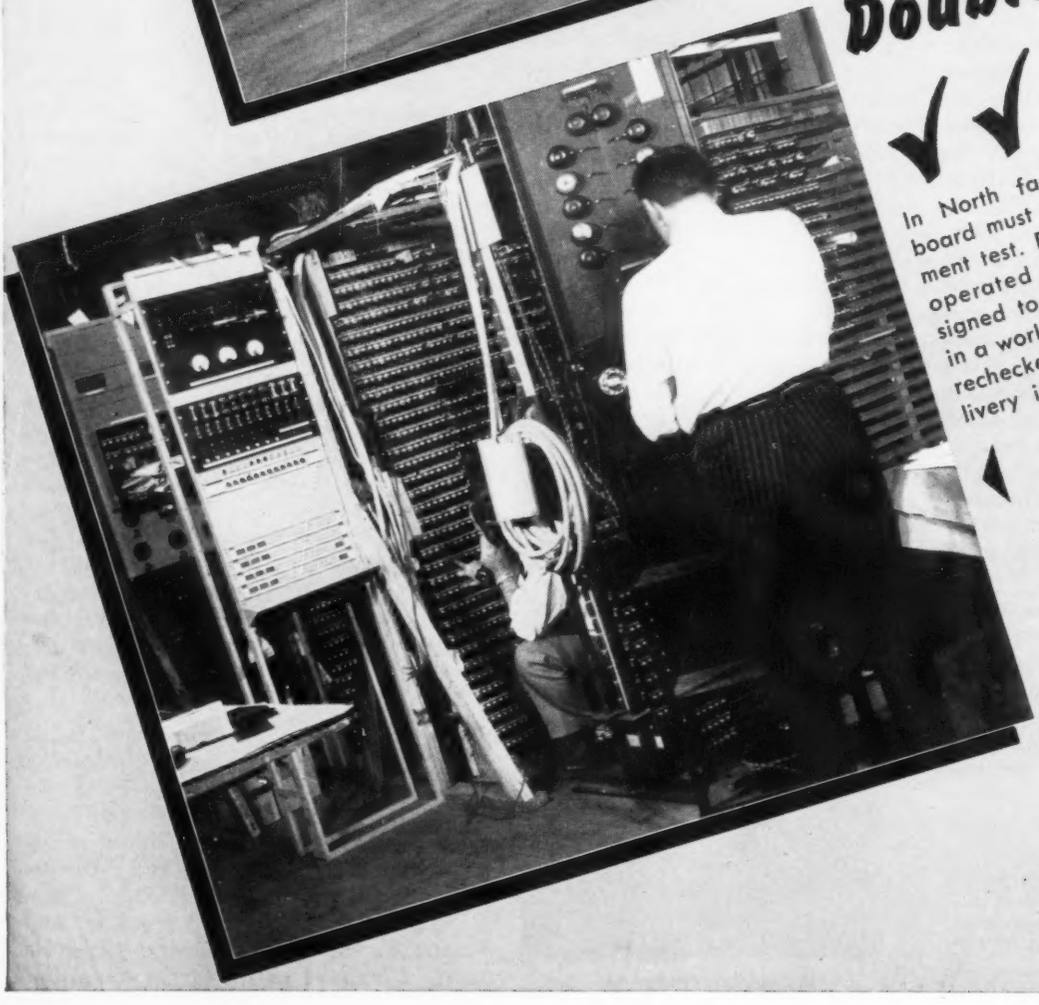
In North factories every switchboard must pass a rigid pre-shipment test. Each is assembled and operated under conditions designed to prove its dependability in a working installation. It is then rechecked and readied for delivery in ready-wired bays.



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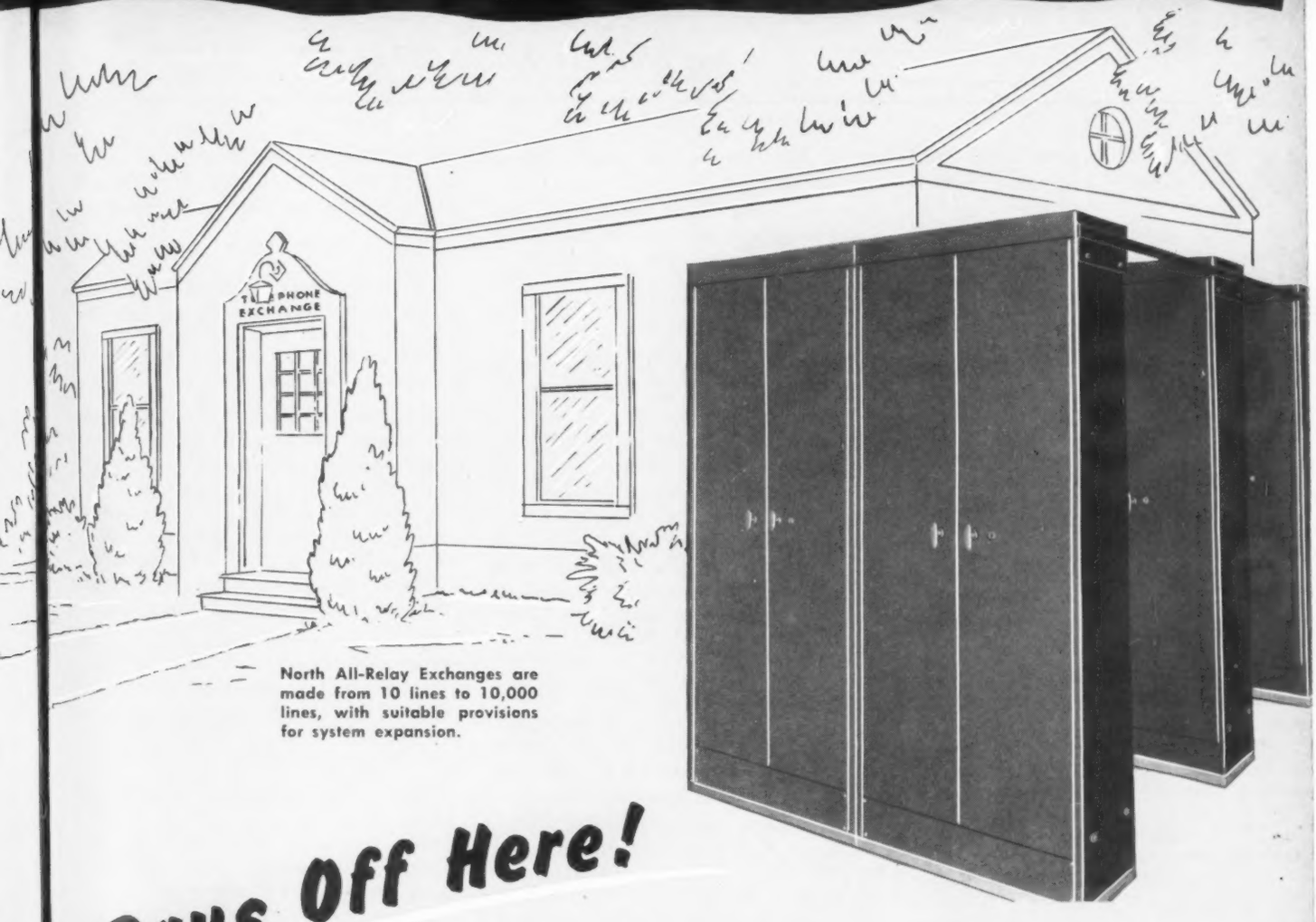

North All-Relay Exchanges are made from 10 lines to 10,000 lines, with suitable provisions for system expansion.

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THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

A REVOLUTIONARY new tool for splicing field wire has recently been developed under Signal Corps sponsorship by Aircraft-Marine Products, Inc. This tool, which is semi-automatic and easy to use—even when extreme cold requires the wearing of mittens—will eliminate to a great extent the slow hand splicing method formerly used and so well-remembered by many ex-GI telephone men.

This new wire splicing tool is the result of extensive research and development to find a satisfactory method of splicing field wire under all weather conditions. Essentially, the new system of wire splicing consists of two interrelated elements—the tool itself and the specially designed splicing sleeve.

Some of the outstanding features of this new splicing system are listed as follows:

(1) Allows the making of a complete splice in 30 seconds. (The old method required three or four minutes.)

(2) Permits linemen wearing mittens to make perfect splices easily.

(3) Eliminates need for rubber and friction tape. The one tool replaces knife and pliers as used on the conventional type splice.

(4) Due to the fact that the tool cannot be released from the wire until the splice is completed, eliminates the possibility of an imperfect splice, it is reported.

It is believed that this new tool will save countless minutes on the battlefield and shorten the length of time a repairman is exposed to enemy fire.

• • •

According to AT&T's *Long Lines* magazine, recent government figures show that the length of service of the average employe in other industries is a lot less than for telephone people. Elsewhere, the average time on a job for men is three and one-half years against nine years for telephone men.

For women, the average is four years in the Bell System, two years in other industries.

In the Long Lines Department, the average service for men is almost 18 years, and the average for women is about eight years.

• • •

We noticed a yellow telephone on the Yellow Cab stand in the Louisville, Ky., airport recently. It was evident that this was a paint job and it was not particularly attractive.

This airport has some outdoor type booths installed on the flight line near the gates that appear to be a very good idea. Apparently, this proves a most convenient arrangement for enplaning or deplaning passengers who must make a telephone call quickly.

• • •

We hear numerous reports these days on the use of pre-lashed cable, but have not been fortunate enough to have witnessed this method in actual use.

As the name implies, the cable is first lashed to the messenger strand and then placed on the poles and tensioned. This idea is not new, but until special tools were developed in recent years, it has not proved very successful.

If any of our readers have had any experience with this new method, we will be pleased to hear from them.

• • •

A friend of the writer recently purchased a new house in a suburban section of a large city. He made application for an individual line telephone, but found that all he could get was a station on a 10-party line. The telephone company was "sorry" and stated that it would be a long time before facilities would be available so that his service could be upgraded.

Naturally, our friend is unhappy for seldom can he make a telephone call when at home or call his wife from the office during the day due to the line being continually busy. It is obvious that a 10-party line is of little value in a community of this type where everyone uses the telephone frequently.

• • •

The writer was informed by an inventor friend recently that he has developed and is now ready to start manufacture of a paging system of revolutionary design.

A central transmitter would be used that would send a code signal to receivers about the size of a pack of cigarettes. These receivers could be carried in the pocket and when an individual received a call, a buzzer would sound. Each receiver would be tuned to a separate frequency and a total of 999 would be assigned to each transmitter.

The buzzer would sound on each receiver only when the individual assigned to that frequency was being called. It is claimed that this system will operate reliably over a distance of approximately 25 miles.

When an individual was called on the paging system, he would go to the nearest telephone and call a central bureau for necessary information or instructions.

If this system can do all the things its inventor claims for it, then it should prove ideal for use in hospitals and similar institutions where the conventional type of paging system causes undesirable noise and confusion.

• • •

We note that the pages in magazines reporting the retirement of telephone men and women carry titles such as "Leisure Days Ahead" and "Assignment to Leisure."

This is certainly not true in every case for frequently these people go out and get another job and enjoy working for many years longer. The writer personally knows many retired telephone engineers who are working on their second 30-year plan, doing a wonderful job and enjoying life to the utmost.

Three vital factors determine the wise choice of automatic switching equipment —— and financial stability may depend upon them.

Mr. Smith examines claims

Somewhere tonight a telephone man will ponder long behind closed doors.

We'll call him Mr. Smith. His is the difficult task of deciding which make of automatic switching equipment he will buy. He must examine all claims, and look for proof that the equipment he chooses will be a good investment, based on three vital factors. For upon them may depend the financial stability of his company.

These factors are: **(1) Manufacturer's Background**—How can Mr. Smith be sure the manufacturer has the experience and engineering ability to properly analyze the requirements? *(Automatic's 60 years of building successful Strowger Automatic exchanges stands as proof without equal!)* **(2) Traffic-peak Provision**—Does the manufacturer regularly provide enough switches to carry busy-hour traffic at a high grade of service, as shown on accepted traffic tables? *(Automatic does —the record proves it!)* **(3) Provision for Growth**—Does the manufacturer provide enough extra switch space, as well as extra capacity in batteries, chargers, and ringing equipment, to handle reasonable expansion? *(Automatic does—and again, the record proves it!)*

Remember these points when *you* select automatic switching equipment.

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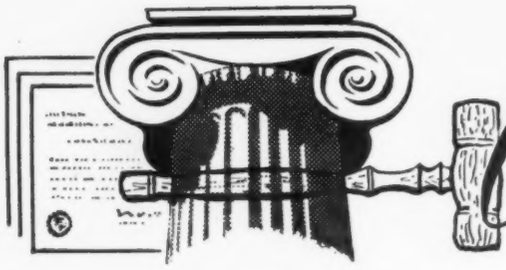

Courts and Commissions

Minnesota Commission O.K.'s 6.17% Rate of Return

Rate increases for all exchanges of the Minnesota Community Telephone Co., Waterville, were authorized on Nov. 9 by the Minnesota Railroad & Warehouse Commission (TELEPHONY, Aug. 15, p. 32).

Net annual operating revenues of the company were $206,868 and net income $32,012. The commission approved increases such as to bring in an estimated $256,600 in net revenues and net income of $37,005. The rate base value was set at $600,000 by the commission, the return on it under the new rates being 6.17 per cent. The commission order stated, "After giving due consideration to the fair value of the applicant's property for rate-making purposes, including materials and supplies, the commission finds the rate base to be $600,000."

Minnesota Community company operates 10 exchanges, serving approximately 3,279 local and 1,726 rural subscribers, plus switching 59 stations.

V V

N. C. Company Asks Approval Of Common Stock Issue

The Central Telephone Co., Charlottesville, Va., whose North Carolina headquarters are at Mount Airy, asked the North Carolina Utilities Commission on Nov. 6 for authority to issue 35,000 shares of $10 par value common stock and $750,000 worth of sinking fund bonds.

The company, a subsidiary of Central Electric & Gas Co., Lincoln, Neb., and Chicago, Ill., has exchanges in 20 communities in northwestern North Carolina. These include Mount Airy, Asheboro, Biscoe, Leaksville, North Wilkesboro, Sparta, West Jefferson and Yadkinville.

Proceeds from the stock and bond sales would be used to finance the company's construction program and to refinance debts. The stock would be sold to the parent company at $13.25 per share, which was its market value on Oct. 9. The bonds would carry 4.2 per cent interest and would mature Nov. 11, 1978.

Central Telephone said it would realize more by selling the stock to its parent company than by offering it to the public through underwriters or to its stockholders through the issuance of subscription rights because the sale expense would be lower.

Central Electric & Gas already owns 58 per cent of Central Telephone's outstanding common stock.

V V

Wisconsin Independent Asks Raise on Rates Set in 1948

The Urban Telephone Co., Clintonville, has applied to the Wisconsin Public Service Commission for a revision of its present rate structure.

"This revision is necessary," said John H. Spengler, general manager, "if we are to meet our present higher costs and still maintain our high standards of service."

Mr. Spengler said the company has not had a rate increase since 1948, and present rates are based on wages and costs of that time. Since then, he added, wages, the cost of living and taxes have advanced, but the company has not increased its rates.

The Urban company reports that there has been a constant demand for more service and that the number of subscribers in each exchange has increased substantially since 1948. The cost of expanding existing facilities and making replacements is at an all time high.

In commenting on the requested rate revision, Manager Spengler stated: "The revenue from our proposed higher rates will enable us to run a sound, healthy service, increase facilities, and at the same time provide the best possible service. Yet the cost of the increase to the average subscriber will be less than 3 cents a day. Thus the telephone will remain as the biggest bargain you can buy today."

V V

Colorado Company Would Buy Five Exchanges

The Mountain View Electric Association has applied to the Colorado Public Utilities Commission for permission to purchase the following telephone companies: The Arriba Telephone Exchange, the Elbert Mutual Telephone Association, the Genoa-Arickaree Telephone Co., the Cherry Creek Telephone Co., Parker, and the Kiowa Telephone Exchange.

The company has also asked a certificate of convenience and necessity to serve portions of Arapahoe, Douglas, El Paso, Elbert, Lincoln and Washington counties.

The Mountain View company has also applied for an REA loan to improve and expand telephone service, it was reported.

V V

Commonwealth of Pennsylvania Wins $306,000-a-Year Increase

The Pennsylvania Public Utility Commission on Nov. 9 approved an estimated $306,000-a-year rate increase for the Commonwealth Telephone Co., Dallas (TELEPHONY, Oct. 10, p. 43).

The commission on Oct. 28 approved a merger of Commonwealth with the Tioga County Bell Telephone Co., Wellsboro (TELEPHONY, Nov. 7, p. 41).

The Nov. 9 rate increase applies to 22,400 subscribers served by Commonwealth in eight northeastern counties.

Approval of the rate increase came after opposition from Commonwealth subscribers who were represented by former Governor Arthur H. James.

V V

General System Negotiating Purchase of Wisconsin Company

Announcement was made on Oct. 20 that preliminary negotiations had been completed for the purchase of the Langlade Telephone Co., Antigo, Wis., by the General Telephone System, New York.

The General Waterworks Corp., Philadelphia, Pa., has owned the Langlade company for the past seven years.

V V

S. C. Company Asks O.K. to Incorporate, Refinance

The South Carolina Public Service Commission will hold a Dec. 2 hearing on a petition received from S. S. and Thelma W. Helmly, co-partners of the Home Telephone Co., Moncks Corner.

The company has petitioned the commission for authority to incorporate and for approval of a refinancing plan.

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IN THE NATION'S CAPITAL

Continued from page 22

pay their way. Budget Director Dodge has ordered all agencies to draw up plans for "fair and equitable" license fees by Feb. 1.

These will include television and radio station certificates issued by the FCC, in addition to the above-mentioned operating rights. They will also include hydro-electric licenses issued by the Federal Power Commission and securities registration fees on clearances issued by the Securities & Exchange Commission.

The move is "part of the government's continuing effort" to reduce the taxpaying public's expense for "services which provide a special benefit to limited groups," according to the Budget Bureau announcement. At the present time, fees from these various certificates, licenses, etc., issued by all government agencies bring into the Treasury about 20 million dollars a year. It does not come near footing the bill for the expenses of the regulatory agencies issuing them.

The Budget Bureau estimates that the federal government spends about 50 million dollars a year on these certificates. Of course it will not be done immediately or without notice. In each instance, interested parties holding certificates or licenses will be given an opportunity to be heard before the new fee schedules become final.

As far as the FCC is concerned, it will be the first time in the history of its regulation that broadcast stations or others holding authorizations from the FCC will be required to pay fees for their "public convenience and necessity" privileges. The FCC has more than a million licenses of all types outstanding, including 5,000 issued to radio and TV stations.

The vast majority of FCC authorizations, however, represent amateur and commercial operator licenses and authorizations for numerous small non-broadcasting units, such as mobile and fixed stations in some 60 classifications of radio services.

FCC Chairman Rosel H. Hyde said that his commission would begin immediately to consider the Budget Bureau's request outlining the administration's new policy. A formal rule-making proceeding will be called after the commission and its staff has had a chance to draft the necessary changes for administering the new license fee procedure. The biggest problem, according to Chairman Hyde, is to determine a policy which would make a fair and equitable distribution of the license fee load among a million licensees.

Obviously a small "ham" amateur radio operator using his facilities irregularly, is not in a position to pay more than a nominal sum, if anything at all. At the other end of the scale, broadcast and radio stations make their entire living—indeed have constructed their entire business—on the basis of exploiting the use of operating permits granted by the FCC.

In between, we have the great variety of certificates and permits granted to businesses, such as telephone companies, which make only partial use of such things as mobile radio and microwave facilities to supplement their normal land wire operations.

The basic land wire telephone facilities of the nation, of course, have been constructed under certificates of convenience and necessity from state public service commissions, and only in comparatively small degree under permits issued by the FCC.

There are the state governments, police radio, aviation, taxicab industries, etc., which have been making increased use of mobile radio facilities. Obviously these operating rights are not the same in value. But how is the FCC going to devise its scale which will be fair in proportion to the use made, or the financial benefits received from such uses?

With so many classes of users it seems inevitable that there will be a scramble among license holders to put the monkey on the other fellow's back. One thing is certain, FCC will never be able to work out a formula which will please everybody.

FCC Approves Microwave Relay System

Speaking of licenses from the FCC, the Mountain States Telephone & Telegraph Co. has been granted permits for the construction of microwave radio relay stations which will carry television signals over a 110-mile route in Wyoming to serve a community television antenna system. Although small in scope, the application has attracted interest because the system will include a transmitting terminal and five microwave repeater stations, estimated to cost $166,000.

Community Television Systems of Wyoming will build the television receiver station near Laramie, Wyo. This will pick up "off-the-air" signals from a Denver TV station. Mountain States will then transmit the signals to Casper, Wyo., where they will be distributed via wire lines to customers of the community TV antenna system there.

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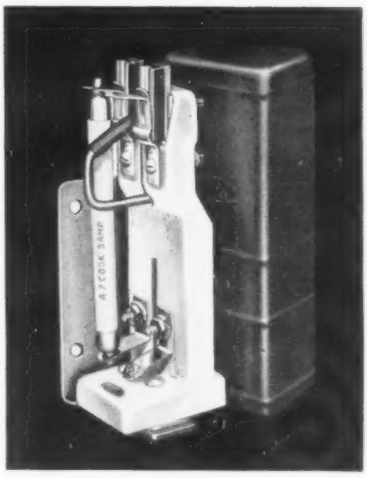

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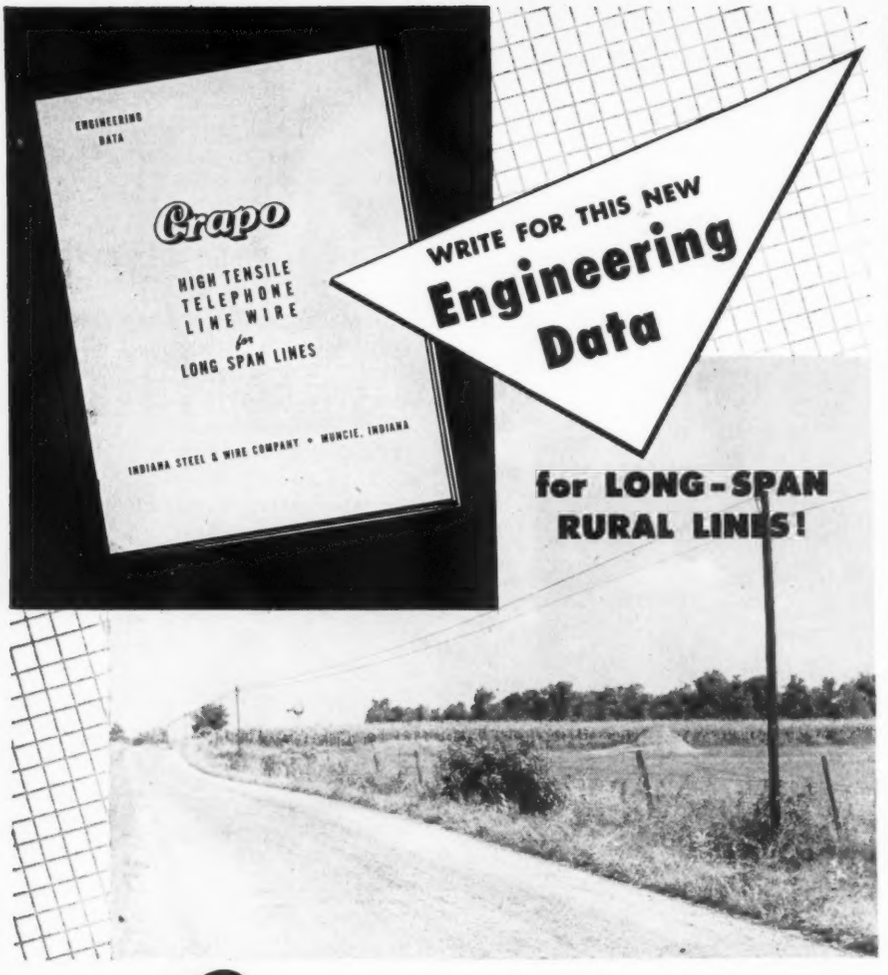

ENGINEERING DATA
Crapo
HIGH TENSILE TELEPHONE LINE WIRE for LONG SPAN LINES
INDIANA STEEL & WIRE COMPANY • MUNCIE, INDIANA
WRITE FOR THIS NEW
Engineering Data
for LONG-SPAN RURAL LINES!

SPECIFY *Crapo* HIGH-TENSILE

TELEPHONE LINE WIRE FOR LOWER OVERALL COST

Crapo HTL-85 — INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.

For Medium Long Spans

Crapo HTL-135 — INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.

For Longer Spans

Crapo HTL-190 — INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.

For Extra Long Spans

● FEWER pole structures are required where *Crapo* High-Tensile Line Wire is used in building rural telephone lines. This means substantial savings in time, labor and material. There are fewer holes to dig and poles to set, less material to be handled, installed and connected — all of which contribute to lower overall construction costs.

Crapo High-Tensile Line Wire also makes for lower maintenance costs. Its superior tensile strength offers increased resistance to ice and wind loads . . . provides a greater margin of safety. Heavy galvanized coatings assure dependable, lasting protection.

For maximum savings in the construction and maintenance of rural telephone lines, specify the *Crapo* Telephone Wire which best fits your requirements.

LATEST ENGINEERING DATA, including Stringing Sags and Tensions, Staking Tables and Guying Tables for Heavy, Medium and Light Loading Districts, are now available. Write today for your copy of Data Book No. N-53.

INDIANA

STEEL AND WIRE CO., MUNCIE, IND.

kind submitted by a telephone company or approved by the FCC. The commission said that its action (which was unanimous) could not be interpreted as extending to matters of detailed policy, such as arrangements between the telephone company and the community antenna group. The FCC acted, however, because of the likelihood that such microwave relay systems will provide about the only practical means by which some people in sparsely populated and remote areas, such as in Wyoming, will ever be able to get TV reception.

On the same day (Nov. 5), the FCC split (4 to 3) on the question of whether to hold a hearing on an application by Petroleum Communications, Inc., to operate a fixed and mobile microwave relay system in the oil pipeline country around Lafayette, La. The applicant proposes to operate as a "cooperative" common carrier for the benefit of 15 eligible users (all oil and gas pipeline operators) on a nonprofit, cost-sharing basis.

Commissioners Bartley, Doerfer, and Lee wanted to hold a hearing on the question of whether the operation of such an industrial service would qualify as a common carrier in being granted mobile microwave radio system permits.

This was apparently the first application of its kind. The telephone industry obviously has an interest in establishment or expansion of such special industry communications networks operated independently of land wire telephone or other common carrier communications facilities furnished by telephone companies.

NLRB Policy Changes

New interpretations of the Labor-Management Relations Act may produce changes in the so-called Taft-Hartley law's administration without waiting for Congress to act on controversial amendments. Guy Farmer, the new chairman of the National Labor Relations Board, is piloting the board along paths which will alter previous collective bargaining policies.

Some of the changes in progress are: (1) A new crackdown on Communist-dominated unions; (2) a release—and a return to state control—of thousands of workers in local industries from the previous broad jurisdiction of the NLRB, which had been built up under sweeping court decisions; (3) the requirement of unions to show more evidence of workers' support before being certified as sole bargaining agents, and (4) a stricter interpretation as to the make-up of bargaining units, restrictions on employer activities, and other controls.

A utility's point of interest in the new temper of NLRB's administration is its attitude towards strikes, which might come under the national emergency clause of the Taft labor act. These would include major utility work stoppages under some conditions. A "watchdog committee" of top administration labor experts has been formed to keep strikes in such industries from even developing into national emergencies.

NLRB is getting cooperation on this from the Office of Defense Mobilization, the Defense Department, and the Federal Mediation Service. The committee, headed by Labor Secretary Mitchell, will meet twice a month to review the national strike picture.

V V

Ohio Companies' Merger, Financing Approved

Joint applications to combine the Athens and Logan Home Telephone companies, were approved on Oct. 26 by the Ohio Public Utilities Commission (TELEPHONY, Oct. 3, p. 40).

The new organization will serve approximately 12,000 subscribers in 13 exchanges under the name of the Commonwealth Telephone Co.

The commission approved issuance of $646,000 in first mortgage bonds for public sale and a $346,000 issuance to present bondholders in exchange for Logan and Athens company bonds.

The Commonwealth company will issue 54,610 shares of common stock at par value of $12.50 in exchange for 2,500 shares of Athens common and 2,920 shares of Logan stock.

V V

Five Arkansas Companies Ask Territory Allocation

It has been reported that the Arkansas Public Service Commission was to have held Oct. 22 and 23 hearings on the allocation of territory to five Independent telephone companies.

The companies concerned are: the E. Ritter Telephone Co., Marked Tree; the Shirley Telephone Co., Clinton; the Hardy Telephone Co.; the Home Telephone Co., Salem; and the Public Service Corp., Tuckerman.

V V

Increase Asked in Alabama

A rate increase application by the Pine Apple Telephone Co. was to have been heard by the Alabama Public Service Commission on Oct. 26.

V V

"Fortune is like a market, where many times if you wait a little the price will fall."—*Bacon.*

Three Reasons Why Koppers Poles are Dependable

Dependable Company

Koppers Poles are made by an organization that has been a leader in the wood-preserving industry for more than half a century.

Dependable Quality

Koppers Poles are long-lasting. In the first place, they are always pressure-creosoted in strict adherence to specifications. Second, there is constant laboratory control over plant production, from a Technical Department that is foremost in the industry.

Dependable Service

Highly trained and experienced personnel in many strategically-located treating plants offer you prompt, reliable service.

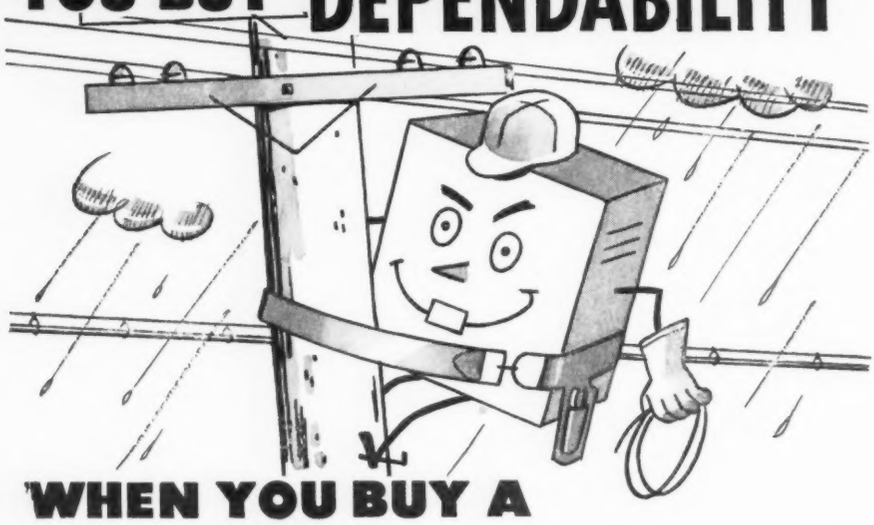
* * *

You can count on *Koppers*—the best-known name in pressure-treated wood.

KOPPERS COMPANY, INC.
Wood Preserving Division • Pittsburgh 19, Pennsylvania

KOPPERS PRESSURE-CREOSOTED WOOD

YOU BUY DEPENDABILITY



WHEN YOU BUY A

RAYTHEON RECTICHARGER

(BATTERY CHARGER)

Dependability is the number one requirement of equipment for the Telephone Industry.

RAYTHEON ENGINEERING REPORT

SUBJECT: Oldest RectiChargeR

Careful testing and inspection of this unit reveals:

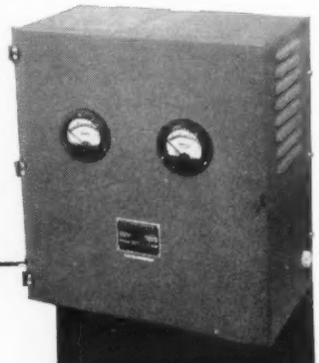
1. Electrical qualities in no way impaired (see chart).
2. A noticeable lack of rust or corrosion on chassis, hardware and components.
3. Original paint shows no sign of deterioration.
4. No evidence of embrittlement or cracking in varnish on magnetic components.
5. All hardware sound and secure.
6. Cable firm and unbroken.
7. Lacing intact with all wiring firmly in original position.
8. All soldered joints secure and strong.

(Signed) George L. Blais
ENGINEERING DEPT.

The dependability of Raytheon RectiChargeRs is amply demonstrated by the service records of units now in use. A typical example is shown in the Engineering Report at the right. And there's no reason why the "old" RectiChargeR described in the report can't go on giving the same faithful service for many more years.

It's no accident that Raytheon RectiChargeRs are setting performance records. Every detail of electrical and mechanical design has been carefully worked out with dependability as the guiding principle.

You get dependability automatically when you buy a Raytheon RectiChargeR, just as you get fully automatic battery charging — with constant voltage output over the complete load range regardless of input change — without under or overcharging.



Specify Raytheon RectiChargeRs and RectiFilteRs for completely dependable Telephone service. Your supplier offers a complete line for all requirements. Ask him for details or write direct.

RAYTHEON

MANUFACTURING COMPANY

EQUIPMENT SALES DIVISION

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INTERNATIONAL DIVISION: 19 RECTOR ST., NEW YORK CITY

RAYTHEON PRODUCTS INCLUDE: RectiChargeR* battery chargers; RectiFilteR* battery eliminators; Voltage stabilizers (regulators); Transformers; Tubes and other electronic equipment.

*Reg. U. S. Pat. Off.

NATIONWIDE TOLL DIALING

Continued from page 20

tomers, however, could not be expected to accurately follow any plan which requires a variety of different procedures to be used in reaching different cities. Only a numbering system which is readily understandable, which customers find convenient to use, and which they can use with a very high degree of accuracy will suffice. The need for accuracy is readily apparent since with the customer's telephone being given access to the intertoll network without the intervention of an operator, a call which is misdialed results in uneconomical circuit usage and, more important, improper charges to the customer's account.

Accordingly, in order to realize the advantages of customer dialing of toll calls on a nationwide basis, it is considered necessary to list all telephone numbers on a 2-5 basis with the code of each office different from that of every other office in the same numbering plan area. Thus each of the 50,000,000 telephones in the United States and Canada will have for toll dialing purposes a distinct identity consisting of 10 digits; a three-digit area code, an office code of two letters of an office name and a numeral, and four digits of the telephone number within the office. Typical numbers for toll dialing would, therefore, be 601-CA3-4567 or 317-MA7-6789. As with operator toll dialing, on a customer dialed toll call which terminates in the same numbering plan area in which it originates, the area code will be omitted and only the office code and telephone number, a total of seven digits, will be used.

As indicated previously with the introduction of the universal 2-5 type number, local calls in and about the larger and medium sized exchanges will be completed by dialing the entire seven-digit number. For the smaller places in the more isolated sections, five-digit or four-digit dialing will frequently be employed where this number of digits will be adequate for all of the telephones in the customers' local dialing area. On a call to a point beyond the geographical limits of the five-digit dialing range, the customer will either dial the number on a 2-5 basis or will prefix an area code to the 2-5 number. In addition to the foregoing, for certain types of dial offices as they are arranged today, it will be necessary for the customer, when dialing a charge call, to prefix

a transfer or directing code to gain access to the toll network.

In many of the larger step-by-step cities, practical considerations usually require a transition to 2-5 numbering by passing through an intermediate stage where mixed numbering systems such as combinations of 2-4 and 2-5 or five digits and 2-5, are employed. Mixed numbers in the same city impose penalties on operator toll dialing and preclude long haul inward customer toll dialing; hence, such mixed numbering should not be retained longer than necessary. It is especially desirable that the cities to be served through a 4A switching system be placed on a 2-5 basis prior to the service date of this equipment.

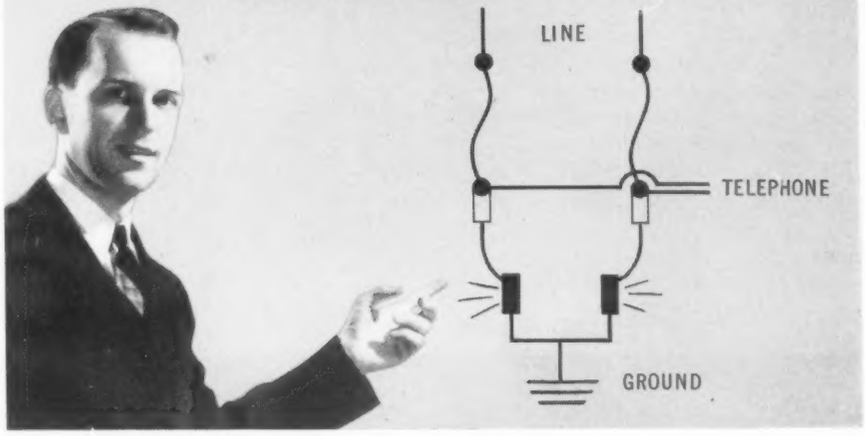
With the general adoption of the 2-5 type number in all places, large and small, the retention or selection of town or community names for office names will be impossible in a number of situations due to code conflicts and other reasons. As noted above, many place names are entirely unsuitable as office names due to difficulties in pronunciation and spelling and their use as such would be a continual cause of errors. Furthermore, most of these small places are served by step-by-step equipment where the trunking arrangements are directly related to the digits of the office code where this is dialed. In order to provide for economical trunking, it is necessary to have office code digits which conform to the trunking pattern and, of course, in many cases place names will not meet these requirements.

From the above considerations it is evident that a large number of offices will require non-locality names in their 2-5 numbers. As a result, it would be advantageous for both customer and operator toll dialing if all central office names were chosen from a suitable list, instead of using names from this list only where forced to by code conflicts, undesirable place names or to meet step-by-step trunking requirements. This uniformity of name assignment should benefit both operator and customer toll dialing in that in dialing toll calls the letters of an office name and not of the town name will always be used. With a mixture of the two types of names there is the possibility that the letters of the town name may be dialed in error, which may cause the call to be misrouted.

Considerable progress has been made in the past two years toward the use of non-locality names taken from a list of suitable central office names. Some steps have been taken to replace existing names found especially troublesome in toll dialing experience to date, but more needs to be done. Pres-

for real protection

MAKE SURE IT "GROUNDS"



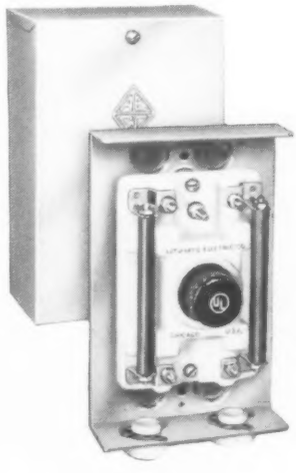
Automatic's substation protectors are self-grounding, self-clearing

feature new "Dollar-Saver" discharge block

New Type 70 Discharge Block shorts to ground instantly on discharge—drains off dangerous potentials completely, safely. Gives real, positive protection unequalled by non-grounding types. Self-restoring, too! Widely approved. Send for Catalog 4068-B for helpful data.

Standard Economical
TYPE 18 SUBSTATION PROTECTOR

Cat. No.	Dimensions	Fuse	Shipping Weight
SB-18	2¾"x7½x2¾"	7 amp.	2¼ lbs.



Heavy Duty
TYPE 20 SUBSTATION PROTECTOR

Cat. No.	Type	Fuse	Shipping Weight
SB-91	20 Outdoor Protector (with cover)	7 amp.	4¾ lbs.
SB-88	20A Indoor Protector (without cover)	7 amp.	1¾ lbs.

"Have a Good Ground and You'll be Safer"

Products of the Telephone Specialty Department of

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ent locality names already on a 2-5 basis can scarcely justify a change, except perhaps on a long range basis, unless experience has shown them to be definitely detrimental to toll dialing accuracy.

For the various reasons already discussed, a list of suitable central office names has been prepared and is presented below. Generally this will meet the needs satisfactorily in choosing new office names for all offices in dialing areas with 2-5 listings.

In conclusion, it needs to be recognized that a sound numbering plan for every local office is an essential part of long-range planning. Decisions vitally affect equipment arrangements, directory listings, public relations and the results that can ultimately be expected from customer dialing. The costs of converting from the present plan to the one decided upon as a long-range objective may be materially reduced by an early decision on a long-range plan, permitting a gradual change-over in an orderly manner.

LIST OF SUITABLE CENTRAL OFFICE NAMES
With ( ) Directory Abbreviations

22 Series
Academy (ACdmy)
Baldwin (BAldwn)
Canal (CAnl)
Capital (CAptl)
Castle (CAstl)

23 Series
Adams (ADms)
Belmont (BElmnt)
Beverly (BEvrly)
Cedar (CEdr)
Center (CEntr)
Central (CEntrl)

24 Series
Chapel (CHapl)
Cherry (CHery)
Chestnut (CHstnt)
Churchill (CHrchl)
Circle (CIrcl)

25 Series
Alpine (ALpin)
Blackburn (BLakbrn)
Clearbrook (CLerbrk)
Clearwater (CLerwtr)
Clifford (CLifrd)
Clinton (CLintn)

26 Series
Amherst (AMhrst)
Andrew (ANdrw)
Andrews (ANdrw)
Colfax (COlfx)
Colony (COlyn)
Congress (COngrss)

27 Series
Bridge (BRidg)
Broad (BRoad)
Broadway (BRdwy)
Brown (BRown)
Browning (BRowng)
Crestview (CRstvw)
Crestwood (CRstwd)

28 Series
Atlantic (ATlntc)
Atlas (ATlas)
Atwater (ATwtr)
Avenue (AVenu)
Butler (BUtlr)

29 Series
Axminster (AXmnstr)
Axtel (AXtel)
Cypress (CPprss)

32 Series
Davenport (DAvnprt)
Davis (DAvis)
East (EAst)
Eastgate (EAstgat)
Faculty (FAclty)
Fairfax (FAirfx)
Fairview (FAirvw)

33 Series
Deerfield (DErfld)
Dewey (DEwy)
Edgewater (EDgwtr)
Edgewood (EDgwd)
Edison (EDisn)
Federal (FEdrl)

34 Series
Diamond (DImnd)
Dickens (DIkns)
Fieldbrook (FIeldbrk)
Fieldstone (FIeldstn)
Fillmore (FIlmor)
Fireside (FIresd)

35 Series
Elgin (ELgn)
Elliot (ELiot)
Elmwood (ELmwd)
Flanders (FLandrs)
Fleetwood (FLetwd)

36 Series
Emerson (Emrsn)
Empire (EMpir)
Endicott (ENdicot)
Forest (FOrest)
Foxcroft (FOxcrft)

37 Series
Drake (DRake)
Drexel (DRexl)
Essex (ESex)
Franklin (FRnkln)
Frontier (FRntir)

38 Series
Dudley (DUdly)
Dunkirk (DUnkrk)
Dupont (DUpnt)
Evergreen (EVrgrn)
Fulton (FUltn)

39 Series
Exbrook (EXbrk)
Exeter (EXetr)
Export (EXprt)
Express (EXprss)

42 Series
Garden (GArdn)
Garfield (GArfld)
Hamilton (HAmltn)
Harrison (HArisn)
Hazel (HAzl)

43 Series
General (GEnrl)
Geneva (GEneva)
Hemlock (HEmlok)
Hempstead (HEmstd)
Idlewood (IDlwd)

44 Series
Gibson (GIbsn)
Gilbert (GIlbrt)
Hickman (HIckmn)
Hickory (HIkry)
Hillcrest (HIlcrst)
Hilltop (HIltp)

45 Series)
Gladstone (GLadstn)
Glencourt (GLenert)
Glendale (GLendl)
Glenview (GLenvw)
Globe (GLobe)

46 Series
Hobart (HObrt)
Homestead (HOmstd)
Hopkins (HOpkn)
Howard (HOwrd)
Ingersoll (INgrsl)

47 Series
Granite (GRnit)
Greenwood (GRnwd)
Greenfield (GRnfld)
Greenleaf (GRnlf)
Grover (GRovr)
Gridley (GRidly)

48 Series)
Hubbard (HUbbrd)
Hudson (HUdsn)
Hunter (HUntr)
Huntley (HUntly)
Huxley (HUxly)
Ivanhoe (IVnho)

49 Series
Gypsy (GYpsy)
Hyacinth (HYcnth)
Hyatt (HYat)

52 Series
Jackson (JAksn)
Lafayette (LAfayet)
Lakeside (LAksd)
Lakeview (LAkvw)
Lambert (LAmbrt)
Lawrence (LAwrnc)

53 Series
Jefferson (JEfrsn)
Kellogg (KElog)
Keystone (KEystn)
Lehigh (LEhi)
Lenox (LEnox)

54 Series
Kimball (KImbl)
Kingsdale (KIngdl)
Kingswood (KIngwd)
Liberty (LIbrty)
Lincoln (LIncn)
Linden (LIndn)

55 Series
Reserved for
Radiotelephone

56 Series
John (JOhn)
Jordan (JOrdn)
Locust (LOcst)
Logan (LOgn)
Lowell (LOwel)

57 Series
Reserved for
Radiotelephone

58 Series
Juniper (JUnipr)
Juno (JUno)
Justice (JUstce)
Ludlow (LUdlo)
Luther (LUthr)

59 Series
Lyceum (LYceum)
Lyndhurst (LYnhrst)
Lynwood (LYnwd)
Lyric (LYric)

62 Series
Madison (MAdsn)
Main (MAin)
Market (MArkt)
Mayfair (MAyfr)
National (NAtl)

63 Series
Medford (MEdfrd)
Melrose (MElros)
Mercury (MErcry)
Neptune (NEptn)
Newton (NEwtn)
Newtown (NEwtn)

64 Series
Midway (MIdwy)
Milton (MIltn)
Mission (MIssn)
Mitchell (MItchl)
Niagara (NIagra)

65 Series
Oldfield (OLdfld)
Olive (OLiv)
Oliver (OLivr)
Olympia (OLmpia)
Olympic (OLmpic)

66 Series
Mohawk (MOhwk)
Montrose (MOntrse)
Morris (MOris)
North (NOrth)
Northfield (NOrfld)
Normandy (NOrmdy)

67 Series
Orange (ORnge)
Orchard (ORchrd)
Oriole (ORiol)
Orleans (ORlns)
Osborne (OSbrn)

How to Solve Your Cable Spinning Problems the Easy Way

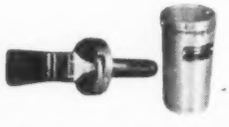
Platform Clamps
Support splicer's platform from aerial cable—spun or otherwise. Won't slide on grade or damage cable. Bronze alloy.

Handline Block,
specially designed for spun cable, may be used on cable with any other kind of support. Clamps on strand. Won't slip on grade or damage cable. No wrench is needed. Bronze alloy.

Single Eye Hooks
...for four supporting adjustable ropes of a splicer's platform. Cadmium-plated steel.

Double Eye Hooks
make splicer's platform readily adjustable ...by threading supporting ropes through double eye. Cadmium-plated steel.

Lashing Wire Clamp
designed by Neale, holds spinning wire with positive action clamp when terminating at pole. Also keeps slack from running back in cable repairs. Bronze alloy with cadmium plated screw.



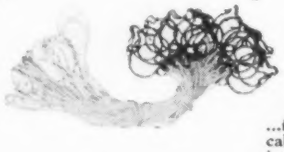
Soap Can & Brush
keeps pressure testing soap or paint in excellent condition. Cast aluminum for light weight. Tight-fitting cover serves as handle for brush. Container equipped with spring belt clip.

LITTLE GIANT Slack Pullers

Here's a combination of great strength and very simple operation...to make difficult operations easy. Furnished with either slip handle (left) or ratchet (right). Moving parts cadmium plated.

Cable Placing Ring Guide Roller
offers means of pulling cable in and takes down pull on tow line to truck. Cadmium plated steel with bronze bushing.

Cable Placing Shoe
is used ahead of spinner to raise cable from reel to strand in placing and spinning cable. Also used stationary at pole when placing with rings.



Steel Placing Rings
...for light cable. Slip rings onto cable at pole and attach to pulling line. Rings distribute themselves every five feet along span. Sets of 20, including 110 feet of rope attached.

Bronze Cable Placing Ring.
Roller design eliminates sheath damage of all sizes of cable. Cast bronze body and bronze rollers.

CABLE SPINNING MANUAL
gives complete details on operation of Neale Cable Spinner with easy-to-follow service and maintenance instructions.

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68 Series
Murdock (MUrdk)
Murray (MUrry)
Museum (MUseum)
Mutual (MUtual)
Overbrook (OVrbrk)
Overland (OVrlnd)

69 Series
Myrtle (MYrtl)
Owen (OWen)
Oxbow (OXbo)
Oxford (OXfrd)

72 Series
Palace (PAlace)
Park (PArk)
Parkview (PArkvw)
Parkway (PArkwy)
Randolph (RAndlf)
Raymond (RAymd)
Saratoga (SArtoga)

73 Series
Pershing (PErshng)
Redfield (REdfld)
Redwood (REdwd)
Regent (REgnt)
Republic (REpblc)

74 Series
Pilgrim (PIlgrm)
Pioner (PIoner)
Riverside (RIvrsd)
Riverview (RIvrvw)
Shadyside (SHadysd)
Sherwood (SHerwd)

75 Series
Plateau (PLato)
Plaza (PLaza)
Pleasant (PLsnt)
Plymouth (PLymth)
Skyline (SKyln)

76 Series
Poplar (POplr)
Porter (POrtr)
Rockwell (ROckwl)
Roger (ROgr)
Rogers (ROgr)
South (SOuth)
Southfield (SOthfld)

77 Series
Prescott (PRscot)
President (PRsdnt)
Prospect (PRspct)
Spring (SPrng)
Spruce (SPrce)

78 Series
State (STate)
Sterling (STrlng)
Stillwell (STllwl)
Story (STory)
Sunset (SUnst)

79 Series
Pyramid (PYrmid)
Swathmore (SWthmor)
Swift (SWift)
Swinburne (SWinbrn)
Sycamore (SYcmor)

82 Series
Talbot (TAlbt)
Talmadge (TAlmdg)
Taylor (TAylr)
Valley (VAlly)
Vandyke (VAndyk)

83 Series
Temple (TEmpl)
Tennyson (TEnysn)
Terminal (TErmnl)
Terrace (TErace)
Vernon (VErnon)

84 Series
Thornwall (THrnwl)
Tilden (TIldn)
Victor (VIctr)
Victoria (VIctria)
Viking (VIkng)
Vinewood (VInwd)

85 Series
Ulrick (ULrik)
Ulster (ULstr)
Ulysses (ULyses)

86 Series
Townsend (TOwnsnd)
Underhill (Undrhl)
Union (UNion)
University (UNvrsty)
Volunteer (VOlntr)

87 Series
Tremont (TREmnt)
Triangle (TRiangl)
Trinity (TRnity)
Trojan (TRojn)
Uptown (UPtwn)

88 Series
Tucker (TUckr)
Tulip (TUlip)
Turner (TUrnr)
Tuexedo (TUxedo)

89 Series
Twilight (TWilght)
Twinbrook (TWinbrk)
Twinoaks (TWinoks)
Twining (TWning)

92 Series
Wabash (WAbsh)
Walker (WAlkr)
Walnut (WAlnt)
Warwick (WArwk)
Waverly (WAvrly)

93 Series)
Webster (WEbstr)
Wells (WElls)
Wellington (WElngtn)
West (WEst)
Westmore (WEstmor)
Yellowstone (YElowstn)

94 Series
Whitehall (WHitehl)
Whitney (WHitny)
William (WIliam)
Williams (WIliam)
Wilson (WIlson)
Winsor (WIndsr)

95 Series
Reserved for
Radiotelephone

96 Series
Woodland (WOodlnd)
Woodlawn (WOodlwn)
Woodward (WOodwrd)
Worth (WOrth)
Yorktown (YOrktn)

97 Series
Reserved for
Radio Telephone

98 Series
Yukon (YUkon)

99 Series
Wyandotte (Wyndot)
Wydown (WYdown)
Wyman (WYman)

V V

N. D. Co-op Plans Purchase

It was recently reported that the Souris River Telephone Mutual Aid [illegible] of Velva, N. D., is seeking to buy the Lone Star Rural Telephone Cooperative Association, Glenburn, and the First Farmers Telephone Association, Lansford. Directors of both companies were notified that the co-op had executed options to buy.

V V

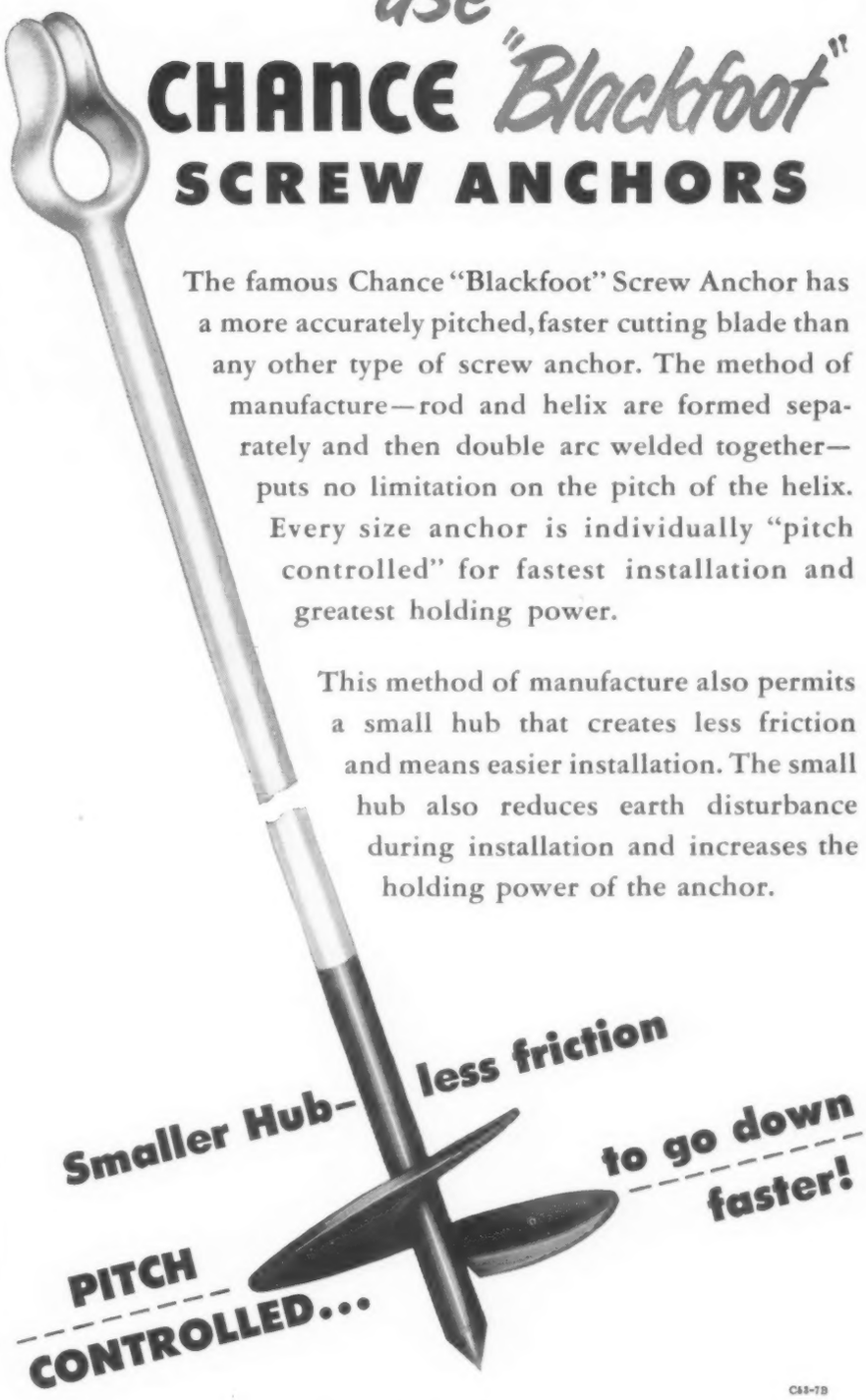
Files Financing Plan with SEC

Rochester (N. Y.) Telephone Corp., plans to spend $9,650,000 for new construction in the last four months of this year and all of 1954, according to a registration statement filed with the Securities & Exchange Commission (TELEPHONY, Nov. 14, p. 28).

For Easier Installation

...GREATER HOLDING POWER

use CHANCE "Blackfoot" SCREW ANCHORS



The famous Chance "Blackfoot" Screw Anchor has a more accurately pitched, faster cutting blade than any other type of screw anchor. The method of manufacture—rod and helix are formed separately and then double arc welded together—puts no limitation on the pitch of the helix. Every size anchor is individually "pitch controlled" for fastest installation and greatest holding power.

This method of manufacture also permits a small hub that creates less friction and means easier installation. The small hub also reduces earth disturbance during installation and increases the holding power of the anchor.

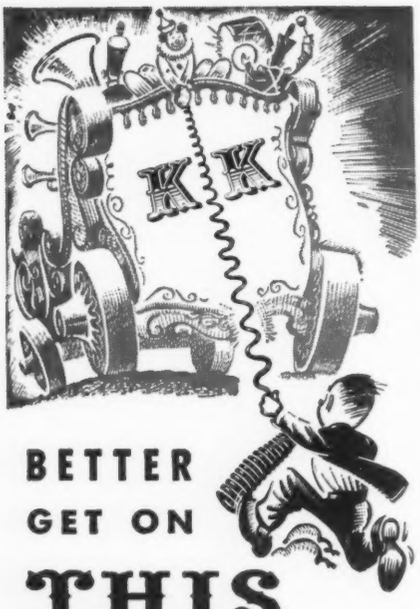
C53-7B

You know it's RIGHT when you specify CHANCE

A·B·CHANCE CO·

CENTRALIA, MISSOURI
SAN FRANCISCO, CALIFORNIA

ANCHORS • GUYING FIXTURES • LINE CONSTRUCTION TOOLS • CONDUCTOR CLAMPS
GROUNDING EQUIPMENT • HOT LINE TOOLS • HIGH VOLTAGE SWITCHES • CUTOUTS



BETTER GET ON THIS BANDWAGON

Koiled Kords are popular with telephone subscribers. They like the way Koiled Kords help make it more convenient to use the phone.

Consumer acceptance is the BIG reason why more and more independent telephone companies are installing new telephones already equipped with Koiled Kords. This rate of growth means that soon, phones with Koiled Kords will be the rule rather than the exception.

Koiled Kords offer users the genuine benefits that help attract new business, keep present subscribers happy. Koiled Kords S-T-R-E-T-C-H to five times their retracted length as needed with only one pound pull, retract to their original neat coil when released.

Koiled Kords reduce maintenance costs, because Koiled Kords eliminate the kinking, dangling, tripping and catching that are the chief reasons for damage to equipment and breaks in service with old style cords. Neoprene outer jacket cannot fray. Koiled Kords are unharmed by perspiration, humidity, oil, water, grease or acid.

Anticipate subscribers' preferences, keep your equipment modern, up-to-date. Specify Koiled Kords from your independent telephone supplier.

Koiled Kords
INCORPORATED
BOX K
NEW HAVEN 14, CONN.

PLANT COMMITTEE REPORT

Continued from page 23

conduct plant schools and have adopted formal training programs. In some cases the smaller companies in adjacent areas have been invited to attend these schools. This does not and will not solve the problem. It is the responsibility of the management of each company, regardless of its size, to properly train its employes, particularly if good, efficient work is to be expected. In this connection, I would like also to mention the fact that we probably have not devoted enough time to selling the value of the company to the employe. Too many employes have yet to be given the serum which makes good service-minded telephone employes. That is our job as managers of telephone properties.

Several state associations have done something about the training problem. I only hope we can interest more of them in a program such as has been adopted in Nebraska. That state has given help to smaller companies. . . .

I would like to briefly mention a subject which is of major importance to all of us in the telephone industry, yet about the only time it is mentioned is in a rate hearing—that is service. We, in our business, have only one item for sale. We don't sell telephones, poles, crossarms, wire, cable or switchboards. We sell *service* and *service* alone. We sell service in our own little area or company and quite often we have not realized the part each company plays in our world-wide telephone system. We sell service in our own communities for a small monthly rate, yet any telephone in the area can reach practically any telephone in the world in a few seconds or minutes. Keeping your plant house in order increases the value of this service to your subscribers.

I would like to have you remember one thing—"The service can be no better than the condition of the plant over which the service is rendered." I will repeat it, as it is important for plant personnel to remember—"The service can be no better than the condition of the plant over which the service is rendered."

I mention some of these subjects to give you an idea of some of the things your Plant Committee discusses and thinks about when we organize our sub-committees, write our papers on various plant subjects, set up our exhibits and request help from some of the companies for committee appointments. For all of the fine work performed by the Plant Committee members I am deeply grateful. It has been an honor and a privilege to serve your association as chairman of this fine group of men and to serve you during these last few years.

GEORGE E. BREWER, Telephone Services, Inc., Chicago, who explained the purposes and objectives of the new USITA Personnel Committee to the convention Plant Conference.

V V

Texas Independent Buys Three Exchanges from SW States

The Northeast Texas Telephone Co., Inc., Bogata, on Nov. 5 announced purchase from Southwestern States Telephone Co., Brownwood, of the Deport, Detroit and Fulbright exchanges.

With the addition of the three new exchanges, the Northeast company now has a total of about 750 subscribers.

Guy Smelser, president of the Northeast company, says the first major construction project to be undertaken will be lines to serve Milton, Minter and Cunningham by way of Pattonville, now on a rural line out of Deport. This area is without any telephone service at present.

Mr. Smelser has been a director of the Texas Telephone Association for four years. For one year he has served on the committee for aid to small companies for the Texas association, and was recently appointed by the United States Independent Telephone Association to serve on the regional committee for aid to small companies for five states, Texas, Kansas, Missouri, Oklahoma and Arkansas.

It was recently announced that the Bogata Telephone Co., owned and operated by Guy and Martha Smelser, had been incorporated for $75,000 and the name changed to Northeast Texas Telephone Co.

DOW

PENTA-TREATED POLES MAKE GOOD NEIGHBORS

Detroit Edison builds for the future and for its customers with clean, treated poles

The Dow Chemical Company
Dept. PE 3-2C2-A, Midland, Michigan

_____ Send me free booklet, "Pointers on Penta".

_____ Send me list of PENTA treating plants.

Name_____

Title_____ Company_____

Address_____

City_____ State_____

Looking for a *good neighbor policy?* Specify *clean*, full-length PENTA* treatment for all utility poles.

Over the years, PENTA-treated poles have been doing double duty for the Detroit Edison Company. In residential areas these poles are doing their share in maintaining good customer relations because they are clean, attractive—fit well in modern settings. They are also keeping repair and replacement costs at a minimum by resisting decay and termite damage. PENTA-treated poles last many years.

Over 60 suppliers across the nation can furnish you with PENTA-treated poles. Be sure to ask your regular supplier about *clean* *PENTAchlorophenol or write THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

KLEIN

Talk to any old-timer on the job and he'll tell you Klein equipment is his choice for comfort—for safety—for service. Look for the familiar Klein trade-mark on pliers, safety straps and belts, climbers, grips and wrenches. Klein has been serving the electrical industry "Since 1857."

ASK YOUR SUPPLIER

Foreign Distributor: International Standard Electric Corp., New York

Write for your free copy of the Klein Pocket Tool Guide today!

"Since 1857"

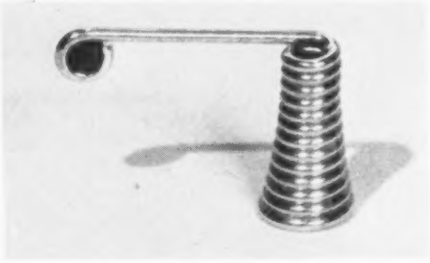
Mathias KLEIN & Sons
Established 1857 — Chicago, Ill., U.S.A.
3200 BELMONT AVE., CHICAGO 18, ILL.

news on new PRODUCTS

ELECTRICAL SPRING CONNECTOR—Two new sizes of the "Scotchlok" electrical spring connector for making splices in electrical wiring also have been introduced by Minnesota Mining & Manufacturing Co.

Described by the firm as a spring-type connector that can't shake loose and requires no tools, the type "M" (medium) connector was introduced to electricians last year.

Type "L" (large) and type "S" (small) connectors have been made nationally available. With these additions, the "3M" line of connectors can



be used on all wire sizes ranging from No. 6 to No. 18 AWG, either solid wire or stranded, in several hundred combinations.

Listed by Underwriters Laboratories, the line of connectors is expected to find wide usage for making splices in circuit wiring and for fixture hanging and appliance hook-up.

Made of zinc-plated steel wire in the form of a tapered coil spring, the lubricated connectors are easily screwed on the stripped ends of the wires with the fingers. A notched turning stem provides adequate leverage during application and is then snapped off leaving a neat splice with no sharp ends.

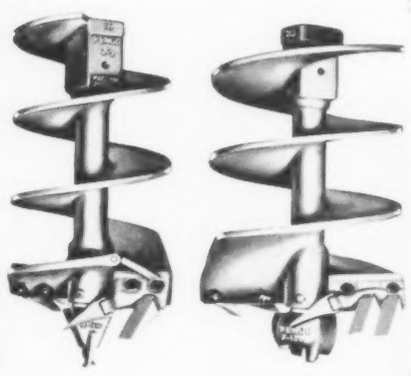
The coil spring design allows the connector to expand while being applied, but provides a shake resistant, tension grip on the wires once the splice has been made.

The small diameter of the connector adds but a fraction of an inch to the diameter of the wires, making it especially valuable for joining wires in crowded junction boxes.

Recommended insulation for use with the connectors is "Scotch" plastic electrical tape No. 33 providing a completely water-and-oil-resistant splice. The connectors are available in boxes of 100 through electrical wholesalers selling "Scotch" brand of electrical products. Request NP206.

• • •

EARTH AUGERS—A completely new series of Flight earth augers—especially developed for jobs where there are a great many holes of the same size to be bored, or where sub-surface material



is very loose or dry—has been added to its Pengo line of earth boring tools by Petersen Engineering Co.

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP206____; NP207____; NP208____; NP209____; NP210____;
NP211____; NP212____; NP213____; NP214____; NP215____;
NP216____; NP217____; NP218____; NP219____.

Name..... Title.....

Company.....

Town and State.....

11/21/53

For *Superior* Poles

WHEN YOU NEED 'EM

Large stocks of Southern Pine at two modern plants enable Taylor-Colquitt to supply superior poles *when they are needed.*

These stocks, selected from the finest stands of Pine in the Southeast, are the products of rigid controls. From forests to plants . . . through carefully supervised steps in manufacture and treatment, these controls safeguard quality . . . assure poles of uniformly high strength and inherent long life.

During more than 27 years, telephone companies in increasing numbers have looked to Taylor-Colquitt for *superior* poles when they need them.

Taylor-Colquitt poles are distributed to independent telephone companies exclusively by Automatic Electric Sales Corporation, 1033 West Van Buren Street, Chicago 7, Ill.

TAYLOR-COLQUITT CO.
SPARTANBURG, SOUTH CAROLINA

PLANTS AT SPARTANBURG, SOUTH CAROLINA AND WILMINGTON, NORTH CAROLINA

LENZ SWITCHBOARD CORDS

LOOK FOR **LENZ** THIS MARK OF QUALITY

For 49 years we have been manufacturing Cords, Wires and Cables for the Telephone Industry.

Lenz NYLON Switchboard Cords have been in continuous service for over five years. Improve your service plus greater economy with these outstanding cords. Write today for complete information.

DISTRIBUTORS

LEICH SALES CORP.
427 W. Randolph Street
Chicago 4, Ill.

VAN LUVEN CO.
120 So. Hewitt St.
Los Angeles 12, Cal.

LENZ ELECTRIC MANUFACTURING CO.
1751 N. WESTERN AVE., CHICAGO 47, ILL., U. S. A.
"IN BUSINESS SINCE 1904"

To those of you who attended the USITA national convention, the above display will look familiar. We are pleased to acknowledge your many favorable comments.

type 'S'

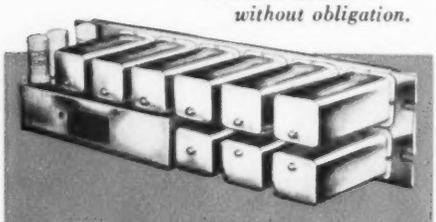
CARRIER

Subscriber and Trunk

FM the proven system for noise-free transmission

- Constant audio output over varying transmission losses. Toll quality up to 55 db line loss without pilot channel control.
- Greater noise rejection than conventional AM carriers . . . noise level never exceeds audio level.
- No transmission level or synchronization adjustments necessary.

Draw a rough sketch of your telephone system showing your plans for expansion and mail to us. Chances are we can show you how to save considerably by the use of type "S" carrier . . . the carrier your system can afford! Our engineers are paid to increase your revenue and cut your costs. Thirty years of communications experience is available — without obligation.



McELROY

MANUFACTURING CORP.

Littleton, Massachusetts, U.S.A.

The new augers, available immediately in 16, 20, 22 and 24-inch diameter hole sizes and to be offered in additional sizes if demand warrants, fit all heavy-duty boring machine makes.

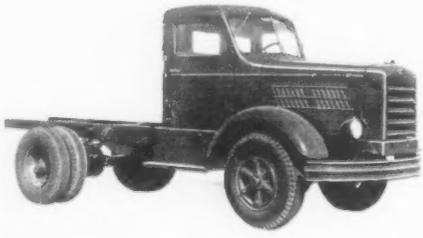
Feature of the new series is a special single-helix design that retains the double cutting characteristic of twin-helix augers but is so spiralled as to hold the flights nearly level, thereby preventing loose material from running back into the hole. Added carrying capacity also is obtained from its additional flights, enabling completion of a hole with fewer trips in and out.

Petersen's new heavy-duty boring machine models will supplement its Pengo twin-helix flight auger series in utility field use. They are offered in standard 26-inch lengths and also 34-inch lengths to permit ground clearance on machines mounted unusually high. Request NP 207.

• • •

TRUCKS—The Four-Wheel Drive Auto Co. recently unveiled a complete new line of heavy-duty trucks at a three-day conference of district sales managers.

Math-Matic Design was announced as the outstanding feature of the new four and six-wheel drive trucks. Under development for many years, Math-Matic



Design produces a mathematically correct proportioning of truck weight and power between front and rear wheels, G. F. DeCoursin, general sales manager, stated.

Among 15 other major new features are Rigi-Tapered frame with deep taper design which rigidizes the front end for mounting equipment and distributes load over the entire frame; a new, larger, full-floating rear axle said to be 30 per cent stronger; Trunion-Mounted radiator, isolated from frame by rubber; rubber-cushioned engine mountings; valve-in-head engines, light weight with high power output; Diesel engines available for all models; 12-volt electric system; Hevi-Duty steering gear with power steering optional; Stirrup-Action clutch and brakes with clutch hydraulically assisted and brakes power assisted. Request NP 208.

HAND GENERATOR—A new product of the Holtzer-Cabot Telephone Equipment Division, the RWG-2308 hand generator was developed by the National Pneumatic Co., Inc. and Holtzer-Cabot Division's research and development laboratories. The generator meets requirements of the U. S. Signal Corps for use in field telephones, field switchboards, radio control units and other communication devices and test sets. Besides being suitable for new applications, it is mechanically and electrically interchangeable with other types of generators now in use.

Although only approximately 2⅞ inches in diameter by 2$\frac{19}{32}$ inches in length, this generator, at 200 rpm crank speed, produces 20 cycles ac, at 1.75 watts with an open circuit voltage of 95-100 volts. Rotor speed at 200 rpm crank speed is 1,200 rpm through a 6-1 gear ratio.

A feature said to be unique in hand generators, is a specially shaped unsymmetrical pole shoe arrangement which limits the starting, cranking torque to a maximum of 2½ inch-pounds. A special cut-in switch, incorporating a dashpot, allows the line to discharge its electrical energy before the talking circuit is re-established, thus eliminating acoustical shock in the telephone receiver.

The complete unit, including gearing and hand crank assembly, does not weigh over 23 ounces. The generator meets all requirements of specification MIL-G-11994 (Sig C) including hermetic sealing and fungicidal treatment. Request NP 209.

• • •

FIRST AID SUPPLIES — First aid supplies of "pharmaceutically controlled quality," in a redesigned case, are re-

ported features of Mine Safety Appliances Co.'s new "type D" first aid kits.

Under a rigid system of quality control, the manufacture and testing of

every first-aid item in the kit is traceable back to its origin, with "control numbers" on each package, MSA spokesman explained.

"This means that any first-aid item can be tracked all the way back to its original source, and guarantees the user the same rigid inspection and control found in the highest quality pharmaceutical products."

The individual unit "D" packages feature new, simplified, fully illustrated instructions in large, clear type. A new blue color gives both the unit "D" boxes and the kits a clean distinctive appearance. The labeling meets the latest requirements of the U. S. Pharmacopeia and the Food and Drug Administration.

Visual swabs—one item in the typical assortment of first aid supplies—were cited as an example of the refinements incorporated in the kits. Applicator tips are of gauze, rather than cotton, because gauze has no loose fibers to cling to the wound. Also it is less absorbent and thus allows the antiseptic to be utilized more efficiently.

To help the user avoid confusing one antiseptic with another, the labels of each antiseptic are printed in a different color.

Only pure ammonia solution is used for inhalants, it is added, and the vials are covered with a special treated fabric that turns brown in case of leaks. The vials are kept in open trays two weeks prior to packaging, and any that show fabric discoloration thus are easily detected and discarded.

Ammonia supplied in glass ampoules for internal use is another item cited to illustrate the "pharmaceutical care" that goes into the new kits. All vials are machine sealed. Not only the cardboard package but also the vial itself is identified as to content, so that there can be no confusion if the package is discarded before the vial has been used.

Compress bandages have 60-inch long tails of bleached muslin, for greater strength and better holding and tying quality, as well as neater appearance.

Triangle bandages are sterilized so they may be used on open wounds when necessary, although primarily intended for large area coverage or for slings.

The newly designed case for the "type D" first aid kit has a hammered-metal finish with a baked enamel surface to resist dust and grease. The lid is flush with the base for a clean, "squared-off" appearance when closed, and ease of storage and handling. When the lid is open, unit packages inside extend about ½ inch above the top of the base, so that quick removal is easy. The stop-hinge on the lid holds

it's dated

YOU CAN PROVE IT TO YOURSELF!

ALPHADUCT DUMBBELL TYPE
NEOPRENE JACKETED DROP WIRE

LASTS LONGER • COSTS LESS!

Every coil of ALPHADUCT drop wire is dated by means of a color coded thread which indicates the year it was manufactured. In this way, with no record keeping, no muss, fuss or bother, you can tell how long Alphaduct stays up without requiring service or replacement.

We know that our dumbbell type neoprene jacketed drop wire will last. It's tested thoroughly through every manufacturing stage. The tough neoprene jacket resists abrasion, moisture, sunlight, oil, water. The insulation sticks tightly to the conductor. The dumbbell or figure eight shape makes the wire easy to split, makes a neat installation.

You, too, may know all this for sure by trying Alphaduct drop wire. And . . . by dating the wire we make it easy for you to prove to yourself that this is the most sensible drop wire investment you've ever made.

IT'S DATED • FOR YOUR CONVENIENCE AND PROTECTION

ALPHADUCT WIRE AND CABLE COMPANY
MILLTOWN, NEW JERSEY

NATIONAL DISTRIBUTORS — LEICH SALES CORPORATION — CHICAGO, ILL.
REGIONAL DISTRIBUTORS — LINDSAY SUPPLY COMPANY, CLEVELAND, OHIO
PANKEY SUPPLY COMPANY, CHARLOTTSVILLE, VA.

WILKINSON LINE LOCATOR

Predetermines exact position and depths of pipes, cables, drains, etc.

Real Insurance against delay and damage
Designed for precision locating
Hundreds of Satisfied users in the telephone industry
You will be satisfied too

WILKINSON PRODUCTS CO.

Originators of small, light all-purpose locators

Write for Complete Information

3987 Chevy Chase Drive
Pasadena 3, Calif.

it at a right angle when the kit is wall-mounted, forming a shelf.

A tubular rubber gasket set in a channel around the inside edge of the top of the base provides a tight seal when the kit is closed, and protection against dust and moisture.

Wall-mounting brackets are designed to lock against the case when not in use, and to be "non-flapping" when the kit is mounted in a vehicle.

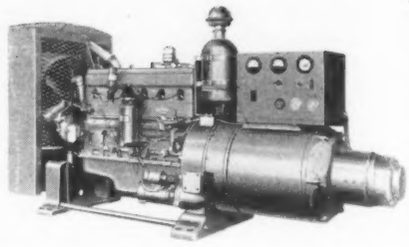
Spring-type snap locks are nickel-plated.

Simplified, graphically presented general first aid practices are given on a sheet inside the lid. Request NP 210.

• • •

ELECTRIC PLANT—D. W. Onan & Sons Inc. announces a new 50KW, 62.5KVA gasoline engine driven electric plant, Model 50KA. This new unit is designed for any type of job requiring heavy duty primary or emergency standby power. It will deliver a full rated 50,000 watts at 80 per cent power factor with ample overload capacity, it is said.

The new generating plant is powered by an International Harvester gasoline engine. The engine delivers 104 horsepower at 1,800 rpm and has a 450 cubic inch piston displacement. It is equipped with replaceable cylinder liners, roto exhaust valves, oil bath air-cleaner and a remote, 12-volt starting system. Water-cooling, full-pressure oil lubrication with a sump capacity of nine quarts and a low oil pressure cut-off to protect the engine are other features offered.

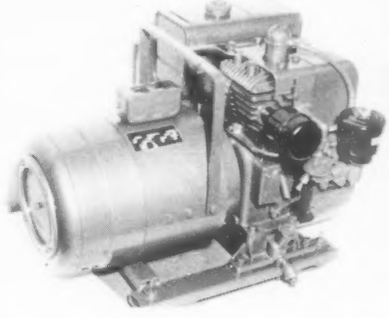


The generator is of drip-proof design, connected direct to the engine for permanent self-alignment. Voltage regulation is plus or minus two per cent. An improved brush rig design features constant-pressure brush springs.

The control box, mounted over the generator, is equipped with a charge rate ammeter, electric water temperature gauge, electric oil pressure gauge, start-stop buttons and running time meter. An automatic voltage regulator is installed inside the control box. Request NP 211.

• • •

LIGHTING PLANTS—Three new models have recently been added to its group of lighting plants by Katolight Corp. These machines generate standard 60-cycle ac current, the same that is developed by city and country high-

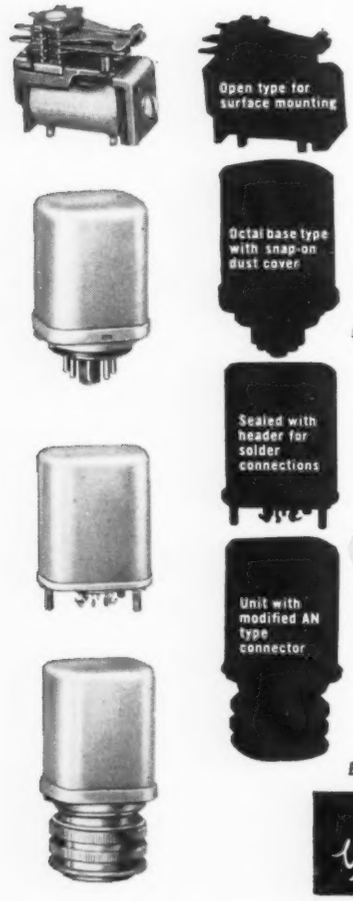


lines. The generators are self-excited, two pole design and are directly attached to the engine crank shaft. The engine of the 1,350-watt size is a 9FB Briggs and Stratton, air-cooled.

The complete unit weighs only 146 pounds and is equipped with rubber mounted type isolators, receptacles and carrying handles.

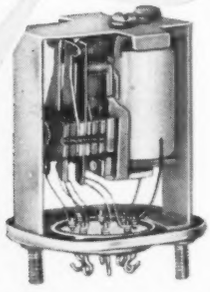
Of interest to foreign purchasers is the fact that the engine will run on kerosene and, when so desired, it is arranged with a two compartment tank starting on gasoline and running on kerosene.

This series is also available in a 650-watt and a 2,000-watt unit. Request NP 212.


Open type for surface mounting
Octal base type with snap-on dust cover
Sealed with header for solder connections
Unit with modified AN type connector

a rugged little space saver . . .

MIDGET TELEPHONE TYPE RELAYS SERIES (80)—OPEN TYPE FOR SURFACE MOUNTING, OR IN HERMETICALLY SEALED CONTAINERS.



This vibration and shock-proof Midget Type Relay is the answer to numerous applications where unfailing operation is necessary. In fact, it is built to meet rigid Army and Navy specifications. This "rugged little space saver" is a compact, multiple contact relay which has been developed over years of specialized engineering in the field by Signal Engineering and Mfg. Co., manufacturers of a comprehensive line of relays and signals of various designs and sizes.

Write for Bulletin MTR-4

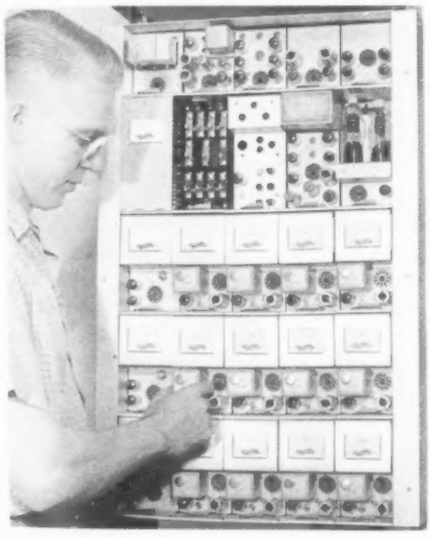
Engineering Representatives in Principal Cities.

Wheelock RELAYS
SIGNAL
ENGINEERING & MFG. CO.
154 WEST 14TH ST. NEW YORK 11 N.Y.

TELEPHONE CARRIER—A new type 45A carrier telephone system recently was announced by Lenkurt Electric Co.

Providing up to 12 carrier-derived voice channels on an open wire line, type 45A systems coordinate with systems such as Western Electric J and Lenkurt 42C. They can be installed on lines already equipped with carrier systems using frequencies up to 35 kc. Four staggered frequency allocations are available to permit installation of several systems on a single pole line.

Many new electrical and mechanical features are incorporated in type 45A systems. Equipment is miniaturized and makes extensive use of plug-in, interchangeable units. All units for a complete 12-channel system plug into a pre-wired shelf which occupies 31½



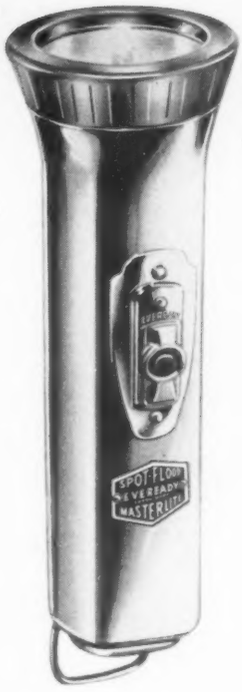
inches on a standard 19-inch equipment rack. The shelf mounts through the rack, extending 5 inches to the front and 2 inches to the rear. Filters, hybrids, relays, and other interchangeable components plug into each equipment unit.

Transmission characteristics are suitable for application to long-haul toll routes, although type 45A systems will also prove-in economically on exchange or toll circuits as short as 10 miles.

Sufficient gain and regulation are provided to permit repeater spacing of 170 miles in non-sleet areas. The system broadband regulator provides up to 48 db of flat loss correction at 99 kc and up to 24 db of slope correction between 99 and 150 kc. In addition, individual regulators in each channel will automatically compensate for up to 7 db of attenuation due to line absorption peaks or other irregularities. Request NP 213.

• • •

FLASHLIGHT—An entirely new type of flashlight which can throw either a concentrated spotlight beam for long-



range use or a diffused floodlight beam for close range—all with a single flick of the switch—has been announced by National Carbon Co.

This new model, known as the "Eveready" No. 7253 Spot-Flood flashlight, makes use of a special new "Eveready" double-filament lamp which is similar in principle to that used in automobile headlamps. This lamp also provides an extra margin of safety in that if one of the two filaments burns out, the other is always available for immediate use in any emergency.

Other features of this new "Eveready" flashlight are its unbreakable polyethylene lens-guard, special ring-hanger, and heavy-gauge seamless brass case, chrome-plated on nickel for lasting finish. The case is of square design, introduced by National Carbon for its "Eveready" "Masterlite" flashlight models to provide easy grip and smart styling. Request NP 214.

• • •

TRUCK HEATERS—The Hunter gasoline truck heater model UH47-2 has been redesigned to cut disassembly time for servicing and repairs to less than 10 minutes. A fully automatic, thermostatically controlled heater operating independent of the vehicle engine, the UH47-2 is designed for use in gas or diesel truck cabs, sleeper cabs, delivery vehicles, walk-ins, utility trucks and small buses.

The sturdy steel cover of the heater is easily detached by loosening two wing bolts. Basic components of the improved model are accessible for quick removal in three steps. The ignition control panel which clips onto its

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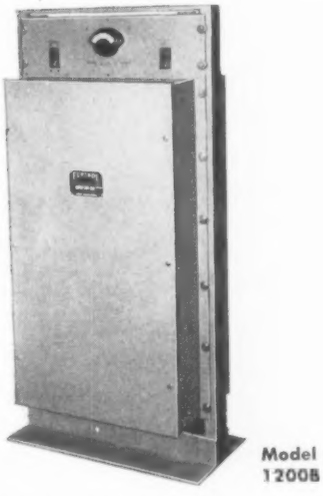

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For complete information, write for Bulletin 160, which describes the single-phase models, from 1/2 ampere to 24 amperes, and Bulletin 161 which covers three-phase models from 25 amperes to 200 amperes.

* *No good on mice.*

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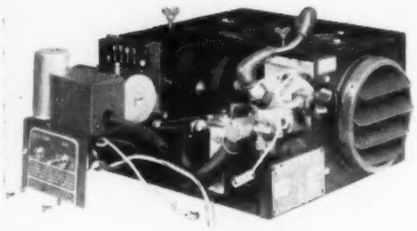

FIGURE 1

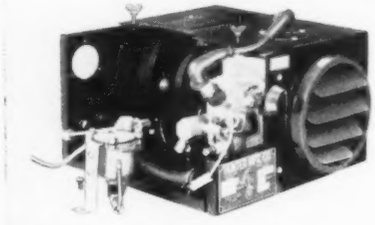

FIGURE 2

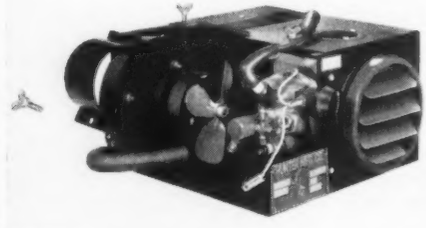

FIGURE 3

mounting, as shown in *Fig. 1*, can be lifted off the mounting after two base screws are loosened. The float bowl assembly is dismounted, as shown in *Fig. 2*, by removing one screw and disconnecting fuel lines.

Fig. 3 illustrates how the motor blower and fan assembly can be lifted out by removing a steel clamp which holds it in position. A single wing bolt holds the clamp firmly in place.

If shop servicing is necessary, however, the UH47-2 has been modified to permit removal of the entire unit. A new connector has been added between the exchanger and the exhaust assembly which can be easily removed. When the heater is re-installed, the connector is replaced to join the exchanger to the exhaust system. Four bolts on the face of the connector assure a tight seal, to prevent seepage of exhaust fumes into the cab.

Resistors, coil and condenser on the ignition control panel have been rearranged for easy disassembly. Previously repair and replacement of the coil or condenser required a soldering operation; the improved model completely eliminates this step. Another feature in the improved unit is the motor's new rubber, shock-type mounting which reduces vibration and noise.

Measuring 10 inches square by 6 inches in height, the model UH47-2 can be installed on the firewall of a truck cab or mounted on the floor behind the seat or in any other convenient location. It has a capacity of 15,000 BTU per hour and 110 cfm air delivery.

Available for six or 12-volt operation, the Hunter heater receives its power from the vehicle battery but operates independently of the vehicle engine. It burns any type of gasoline, averaging less than one pint of fuel per hour. The heater may be fueled direct from the vehicle tank by an electric pump or equipped with its own tank for use with diesel-powered tractor.

Constant circulation of warm air at any desired temperature is maintained by an electric blower fan. By operating independent of the vehicle engine, the heater eliminates costly engine idling for heat during layover periods. Sub-zero starting, unfailing combustion and utmost safety are assured by the heater's constant ignition and sealed-in-steel combustion. Request NP 215.

• • •

TRUCK BODIES—York-Hoover Corp. has announced a new two-man truck body—model 5000 WD.

The body compartment has ample room for necessary tools and materials. Material drawers for small parts are designed with adjustable partitions for maximum adaptability.

Long tools are carried above side compartments on each side while the derrick leg tunnel is located so that derrick legs can be handled with a minimum of effort.

Extension ladder brackets are located on the left side and are designed so that the left cab door can always

be used. Pike poles are carried in a special bracket on the right side.

Special compartments also are included for saws, water cask, cup dispenser and rubber goods.

A telescoping roof (adjustable) protects the entire interior loading space, and material rails with chains extend along each side of the interior.

Safety steps with heavy duty handles are located on each side of the rear end, welded and bolted to body structure.

The body itself is of all steel con-

struction, including the diamondette, non-slip floor.

The model 5000 WD body unit is designed for installation on any conventional one-ton to one and a half ton chassis. The CA dimension (distance from back of cab to center line of rear axle) should range from 52 inches to 60 inches. Request NP 216.

• • •

LINEMEN'S SHIELD—The design of the Marshall linemen's shield has been improved and modified since it was first introduced on the market 30 years ago by the Lineman Protector Co.

The continued popularity of the shields, or "pigs" as they are commonly called by linemen, can be attributed to the ease with which they can be slipped

over cross-arm insulators, splices and similar power line danger points in a matter of seconds.

In both design and construction, prime consideration is given to the ease of application and the life-saving features of the shield. The shield is so constructed to permit it to be raised quickly, placed in position easily and lowered quickly without a waste of motion. Only one piece is necessary to completely cover either one or two insulators.

The strongest kind of wear-resisting rubber compound is used in the manufacture of the shield to provide maximum resistance against ozone-corona and sunlight. Thicknesses vary from three-eighths of an inch along the pressure points to three-sixteenths of an inch along the flaps.

The shield's over-all length of 48 inches permits it to be fitted over single or multiple insulators on single or double cross-arms and insulate the conductor and tie-wires. Some shields are equipped with two straps and non-metallic fastenings to hold them in place. But because the center of gravity is low, the shields cling to wires even though the buckles are not fastened.

In submerged water tests, the Marshall shield was guaranteed for 25,000 voltage acceptance. Request NP 217.

• • •

RUBBER BLANKET CLAMP—A non-metal clamp for linemen's rubber blankets which can be applied easily and

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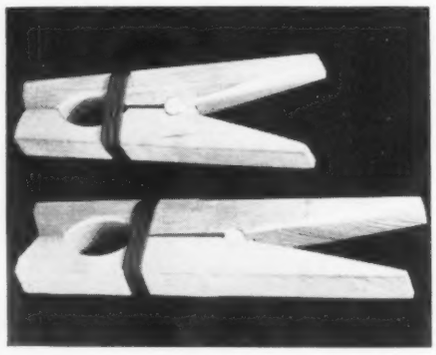
quickly yet offers maximum safety protection has been re-designed by the Surety Rubber Co.

The clamp is a modification of an earlier model introduced several years ago by Surety Rubber, and is now being manufactured in two sizes—7½ inches and 10½ inches—both designed to fit comfortably in a lineman's glove.

Made completely of wood, with the exception of three bands of rubber which furnish the spring action, the clamp contains no metal to conduct current or to interfere with its serviceability. The jaws are of smooth finish, close-grained poplar, and work



on a wooden spool fulcrum. The clamp can be ordered with or without a dowel pin on the lower jaw. The pin is made to fit into the blanket holes but many linemen prefer the smooth jaw to per-

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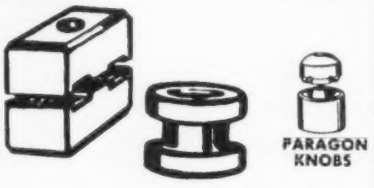

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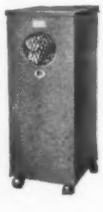

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mit clamping onto any part of the blanket.

Tension for holding the jaws in place is furnished by three bands of super-aging rubber grooved into the clamp so they cannot slip out of place. Actually, only one band is necessary to hold the clamp in position but the designers of the clamp decided upon three to insure maximum protection. The bands are replaceable.

The entire assembly of the clamp can be taken apart for easy shipment or storage. The Jumbo clamp weighs only 5-16 of an ounce and so constructed that the jaw opening can be enlarged by merely cutting the inside of the jaw. Request NP 218.

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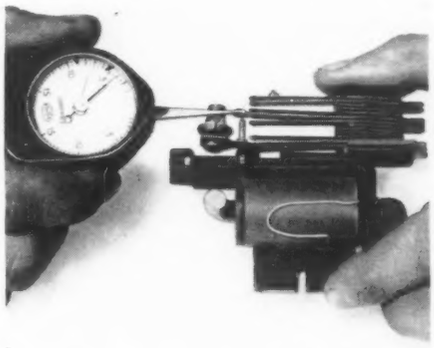
DYNAMOMETER FOR SPRINGS—The George Scherr Co. announces a new precision dynamometer for measuring spring tension, starting torque and the force required to actuate delicate mechanisms.

The new instrument is a highly valuable aid to the inspector or engineer in determining and checking the pressure required to overcome spring tension and other kinds of resistance in fine precision mechanisms.



The instrument is available in two models, small and large, each in several ranges in grams of pressure, acting in both directions. Small number in ranges 5-15, 5-30, 10-50, 20-100, 25-150 grams. Large model 25-250, 50-100, 100-1,000 grams. Request NP 219.

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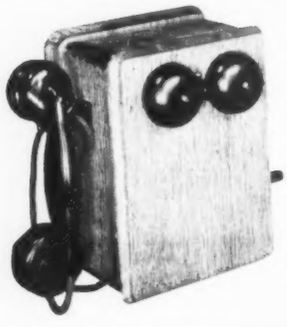

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